

BEFORE THE NATIONAL GREEN TRIBUNAL SOUTH ZONE AT CHENNAI

Application No. 239 of 2021

Navroz Kersasp Mody & Anr

... Applicants

Vs

The Auroville Foundation & Ors

... Respondents

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Certified to be true copies of the respective originals

Dated at Chennai on this the 16th day of December, 2021


Counsel for Applicant

Planning Guidelines for Auroville Township
(2019)

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INTRODUCTION

The purpose of this document is to set the guidelines for preparation of planning documents for Auroville Township. Planning documents shall be drafted to ensure systematic growth of the Township, allow targeted funding and streamline resource-use for economic well-being, accountable administration and management of the township.

The guidelines have been drafted for the Auroville Township Area, keeping in mind the regional context to be an exemplary inclusive development model of urban - rural synergy.

PART I: PHYSICAL FRAMEWORKS

1 The Township

Auroville, as a settlement, is both a living system and an evolving one. The Township is envisaged to consist of a central *City Area* at the core, surrounded by a *Green Belt*, together spanning an area of about 20 sqkm.

Planning documents for Auroville Township should focus on creating a settlement fabric informed by the list of key elements of The Galaxy concept (as approved in the document titled *Planning Principles*). Translation and implementation of The Galaxy concept should incorporate resource-efficiency through context-specific built forms which are climatically appropriate, built with resilient and sustainable building materials and technologies. This is applicable to all built facilities including 'Lines of Force', elements that provide the formal structure for the "galaxy" concept of the city.

Development of Auroville Township will be incremental as it is not a conventional township that is attracting growth with jobs, services and social amenities. It is a project with a spiritual intent and only persons who want to live by the principles outlined in the "Auroville Charter" would be settling here. This implies that the conventional methodology of tying development to population growth rate may not be sufficient. A combination of development programs comprising of projects that aim towards manifesting the goals of Auroville along with projects to meet the basic needs of the inhabitants would be proposed with fixed time intervals to allow for flexibility and fluidity to adapt as Auroville township grows.

The planning of each zone - residential, industrial, cultural and international - should embody the spirit of the zone in its planning, programs and activities with the Matrimandir as the spiritual center, and the Crown as the linking urban-spine connecting these zones to each other. The spatial design should provide for interlinkages between institutions and buildings with similar and codependent functions, for a closed loop between resource and waste besides being climatically appropriate to prevent heat islands. The interface zones between existing villages and Auroville Township should be planned for development projects and activities that benefit and serve both Auroville and the villages.

As Auroville is an experiment in building a city based on a spiritual life, it will attract visitors who want to see and experience this unique endeavor. For a balanced society, spatial planning should address the issue of *level of porosity* between residents and visitors. Essentially, it should allow for a quality of life that is needed for a spiritual community and take into consideration the convenience of visitors. Segregation of functions should be based on the carrying capacity of the social and physical infrastructure.

2 Zonation

2.1 Matrimandir and City Centre: Proposals for enhancing the Matrimandir precinct should be built, ensuring that it is environmentally sustainable. The City Centre should be developed with activities, institutions and projects that are related to the respective adjacent zone and the Matrimandir.

2.2 The Crown Area: This special-use zone traversing all the four zones with buildings, is termed as the “Crown Area”. The Crown Area should provide the bulk of service facilities required to support functions identified as appropriate to the Four Zones. The scale and proportion of and between, built and open spaces should be such that it creates an urban precinct (i) allowing for pedestrian realms and (ii) integrating the four zones to the Crown seamlessly.

2.3 Four Zones of the City Area: The City Area is organized into four zones, namely (i) Residential Zone, (ii) Industrial Zone, (iii) Cultural Zone and (iv) International Zone. Development in the City Area should adhere to land uses as stipulated in the guidelines of the respective zone. Mixed land use within the Four Zones should be permitted in such a manner that the character of each zone is not adversely affected.

- *Residential zone:* The Residential Zone is envisioned to host housing and community facilities for Aurovilians and their families. Spaces such as crèches and lower age group educational needs, work studios and kiosks may also be accommodated.
- *Industrial zone:* The Industrial Zone is intended to be a place for Auroville’s production and service-providing units. These include small and medium-scale industries, training centres, arts and crafts workshops.
- *Cultural zone:* Centres for culture and performance, education and related research will be based in the Cultural Zone. This zone also currently houses an artists’ settlement providing space for artists to live, work and exhibit/ present their work.
- *International zone:* The International Zone will be the site of Cultural Pavilions representing all the major nations and cultures of the world. The pavilions will be showcasing the contributions of nations to humanity.

2.4 Green Belt: The Green Belt is an intrinsic component of the township as an interface between the city and the region. The primary uses permitted in the Green Belt are sustainable agriculture, forestry and land regeneration, together with uses intended to improve the water-management system supplying Auroville and incorporated villages within its boundaries. Activities permitted should promote enhancement of biodiversity and sound environmental management.

Planning for the Green Belt should be guided by the following:

- Protection and enhancement of the hydrological system of the Auroville region.
- Linking of water bodies, canyons, and drainage swales by interconnected, restored and properly maintained vegetative coverage
- Control and management of food-processing (allied activities with regard to food production)
- Respect for the interests of village communities existing in the Green Belt

3 Infrastructure

Infrastructure for the township should be planned in accordance with the geophysical, topographical, hydrological and climatic context of the region, at all levels. Planning of infrastructure facilities should be initiated with impact analysis (energy-use/ demand, carbon footprint, light and noise emissions). Planning and laying of roads and infrastructure services (water, electricity, gas and telecommunications) should allow for the retention of vegetation, and vegetation should not be cleared unless deemed unavoidable.

Given that infrastructure in Auroville is largely based on a distributed system, underground infrastructure city area corridors (service lines such as for water, electricity etc) should be provided for as required. For the laying of telecommunication infrastructure, norms regarding minimum setbacks and buffers should be adhered to.

Service Corridors should be kept clear from vegetation, with accessibility at all times for maintenance purposes and emergency situations. Right-of-ways should be creatively addressed for development that is to happen in multiple phases spaced over long time spans.

4 Mobility and transportation

Planning of all roads (collector, distributor and links within the zones) and transportation networks should consider ownership status of lands adjoining them to avoid uncoordinated/ unplanned growth in private lands. Roads being the conduit for the movement of people, goods and services should be located and sized to maximise their utilisation. Location of the roads should be such that they do not create barriers between built-up and green areas, but allow for the built and unbuilt spaces to merge and mix. All roads, bike lanes, cycle paths and pedestrian paths (except the Crown) should be dimensioned and positioned according to modal shares.

Desired outcomes, at this stage:

- Through and by-pass traffic should be prevented in the City Centre/ City Area. Activities generating significant flows/ volume of traffic and related impacts of similar scale, should be placed on the periphery of Auroville.
- Land use and mobility should be interlinked to promote pedestrian, shared, non-polluting and efficient movement for short distance travel.
- Road design should be done for safe and secure travel.
- Rain water should be harvested and only after treatment/filtration, should it be allowed to percolate.
- There should be a hierarchy of roads based on traffic volumes and reach.

The Crown/ Inner Boulevard will link the Four Zones, providing for urban services for the activities in the Four Zones along with creating a pedestrian realm with varied urban spaces. Width of The Crown, including a right of way (RoW), should respond to the functional needs of the adjacent zone and appropriate interventions for lay-by and crossings for emergencies, repairs & maintenance of infrastructure and buildings. The design of the Crown should also allow for sporting and cultural events that bring residents of the city together like marathons, fiestas and street theatre.

Mobility systems should be conceived for minimum life-cycle costs in monetary, material and energy terms.

PART II: LARGER CONSIDERATIONS

1 Land use

Geophysical systems of Auroville's topography should shape development of Auroville Township, as the least disturbance to the natural topography ensures protection of the ecosystem services. The goals should be,

- To protect and insulate native/extant ecosystems from adverse developments
- To ensure environmentally vulnerable areas from adverse impacts of human activity (such as canyons, high percolation zones, areas sensitive to erosion)
- To retain ecological connectivity of woodlands within the township, and where contiguous, woodlands should be integrated with the overall development. Woodlands on the periphery ought not to end abruptly at the boundary of Auroville – there should be a gradient of environmentally low-impact land use, phasing into the surrounding area wherever possible.
- Non-contiguous woodlands should be connected by green corridors which may be zoned for food production, to encourage pollinators, as urban parks and urban landscaping. Neighbourhood-level greens along with backyards, terraces and landscaped spaces in institutional areas should be tied where possible, with food production with a view to close the waste-to-resources cycle.
- Planning for Auroville Township should promote urban-farming with use of indigenous trees for avenue plantations and in parks. Soil-mapping should be undertaken to identify, zone and notify land specifically suitable for food production. Fertile soil, falling in any area of the township, whether suitable for irrigated agriculture, dry-land cropping, fruit orchards or sprinkler-fed vegetables, should be valued for its possible use either as garden, and/or for food production.

Density of built spaces should be determined based on the types of development, identified as appropriate for each precinct (such as protected areas, dedicated green areas, buffer zones and open spaces).

Integration of built spaces and systems with the extant natural environment at all levels, should be prioritised. Planning of built spaces should enable human interaction with/ in the natural environment on an active basis.

Open-space planning should allow for graded use from neighbourhood level to zonal and city level and in keeping with the tropical climatic given the extreme heat conditions, maximize shaded open spaces to promote outdoor activities. Access to open space for all inhabitants of the city should be planned for.

Adequate planning measures should be undertaken to keep pressures of development in the Auroville region under check. Measures should include monitoring of pollution unfolding in multiple forms. Observations from such exercises should inform frameworks for addressing the causes and mitigating effects.

2 Water

Water management and land cover/ land use controls in Auroville planning area are intimately connected. The overall water management strategy should take into account and include the areas surrounding Auroville. Surface water management should be an integral component of the planning process, including creation of bunds, bio-swales and catchment ponds for water supply and recharge.

Use of ground water as the primary source for the city should be phased out and replaced instead with a multi-sourcing approach. Desalinated water use should be restricted for potable use and as one of the multiple water sources, with its level of contribution to be determined on the basis of overall water-sourcing and usage strategy.

Rainwater harvesting (RWH) and runoff management should be planned for, with active, passive or a combination of both, with total harvesting of the runoff as the target. Excess rain water, that is not used for community consumption, should be used for recharging ground water. Passive rainwater harvesting techniques should be used in landscape design. A rainwater percolation plan should be prepared that takes into account existing and potential percolation areas, existing waterways and critical watershed points within the framework of an overall percolation and water storage plan. High percolation zones should be covered with appropriate and diversified plantation.

First-use water and recycled water should be managed separately. Similarly, rainwater and all self-generated wastewater (grey-water and black water) should be managed separately. This may be undertaken through advanced biological systems. Wastewater should be recycled and reused following relevant standards (such as for irrigation, road construction etc). Location of recycling plants in the township, should be done in consideration of and, where possible, in appropriate locations for reuse (such as for agri-horticultural needs).

High-energy systems should be discouraged and recycling of wastewater should be done through the use of low-energy and cost-effective methods. This is to ensure easier access to this resource. The implementation of this should be determined by an economically viable population density within Auroville.

A combination of centralized and decentralized systems should be used to increase the overall resilience of the setup.

3 Energy

Auroville strives to be a net-zero energy township. Energy should be sourced, as far as possible, from sustainable sources.

An integrated energy system should be designed, developed and managed based on the following:

- combines passive and active devices
- is characterised by high-end use efficiencies to minimize lifecycle costs
- draws upon a mix of energy sources and carriers, and
- pragmatically addresses decarbonisation and financial viability.

Energy conservation and efficiency measures should be an integral part of design and operations of all energy-systems. A combination of centralized and decentralized systems may be used to retain stable and uninterrupted access to power at all times.

The electrical distribution system of Auroville should be designed such that renewable energy generation systems and energy storage systems can be connected to it. Energy storage-systems need to be ecologically, technically and economically sustainable.

4 Waste Management

Auroville is aiming and working towards becoming a zero-waste city. Location of collection points and sorting facilities should be based on the type and density of built spaces and scale of waste generated. Special disposal systems should be sited after relevant buffer considerations.

Processing and disposal of complex waste such as building debris, medical and digital waste, ie those for which adequate facilities are not available within the Township, should follow specific norms. Low-energy based waste disposal systems should be adopted.

PART III: PLANNING PROCESS

The process of planning for Auroville Township should be undertaken through an active, participatory and inclusive approach. Suitable tools (such as workshop sessions, consultations with Working Groups) should be formulated,

- (i) for the interests of the community to be translated into planning measures, and
- (ii) for simplified and effective dissemination of planning outputs.

The planning process should not evolve into self-serving activities, hindering time-bound implementation of plans and development goals.

All planning related exercises should be undertaken with the following process-principles:

- Balance and Responsibility
- Participation of Auroville residents
- Capacity building and Strengthening of partnerships
- Clarity and Transparency



L'avenir d'Auroville

Auroville Town Development Council

MoU between

L'Avenir d'Auroville – ACUR, Town Hall – email : avenir@auroville.org.in

Suhasini Ayer (« Consultant ») – Auroville Design Consultants – CSR – email : suhasini@auroville.org.in

Background

Presently the Auroville planning body “Avenir / TDC” functions as a collection, reviewing, recommending and monitoring organisation for allocation of capital grants. In the absence of an approved program of development priorities that is embedded within a detail development plan, the annual budget plan is driven by multiple working groups, services and individuals lobbying for their projects.

Without an approved development priorities and a detail development plan, Avenir/TDC members devote most of their time in case by case review of proposals to allocate sites, resolve conflicts and mitigate social unrest.

Project Goal

Identify and collate the development prioritization Auroville’s development, aiming at improving and increasing the benefits of the development (infrastructure and building) projects undertaken with capital grants by embedding them within a unified program of development.

Consultant’s Activities

- 1- Stocktaking of the development projects undertaken from 2008-2018 with capital grants by organisations like SAIER, TDC, Housing, Bharat Nivas and others to identify the silos, replication and gaps.
- 2- Stocktaking of the public services and amenities to evaluate their capacity to effectively meet the present and projected future needs based on population growth and carrying capacity; economic, environmental and human.
- 3- Identify the development priorities with projected outputs for presentation to the community for approval and endorsement.

Consultant’s Outputs

- 1- Mapped data to allow GIS analysis to undertake land use planning to prepare an integrated development plan .
- 2- Objectively analysed data to enable to the technical team of L’avenir d’Auroville, review the identified priorities for the detail development plan.



L'avenir d'Auroville

Auroville Town Development Council

- 3- Propose a list of identified and approved development priorities for the GOI grants and other sources of capital funding.

Responsibility of L'avenir d'Auroville

- 1- L'avenir d'Auroville will enable and facilitate access to information from, and meetings with, organisations and agencies within Auroville and otherwise, when needed.

Responsibility of the Consultant

- 1- Every two weeks the Consultant will update L'avenir d'Auroville on the on-going activities and draft outputs.
- 2- The Consultant will keep all the data collected confidential.

Team

When needed, the Consultant will create a team to work on the activities and outputs above, with the consent of L'avenir d'Auroville. L'avenir d'Auroville will pay the relevant fees and costs involved.

Timeline

Delivery of the outputs listed above: 5 months from sign off of the MoU.

AUROVILLE TOWN DEVELOPMENT COUNCIL

L'avenir d'Auroville
 Town Hall, Auroville - 605 101.
 Phone No. 0413- 2623568
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 For L'avenir d'Auroville

Date 21.03.2019

[Signature]
 For Suhasini Ayer
 Date



REPORT OF THE STUDY TO IDENTIFY AUROVILLE'S DEVELOPMENT PRIORITIES FOR 2021 – 2026 (draft -008)

Directions for growth with development policies, planning and programs



Study undertaken by L'Avenir d'Auroville – Town Development Council for the preparation of "Auroville Detail Development Plan"



Lead consultant & coordinator – Suhasini Ayer
Content – Harini Sampath, Martin S and Manas
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Data collection and technical support – Induja, Maud Udin, Vimal Bojraj, Ribhu. R
TDC / L'Avenir Rep – Tejaswini Mistry

April 2021

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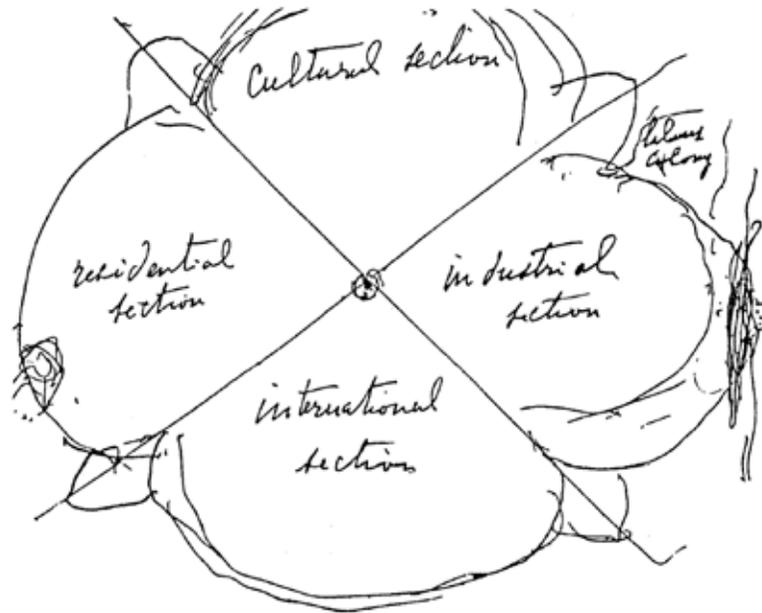


fig-001 – hand sketch

fig-002- pic galaxy model



A. Introduction

Auroville was inaugurated on 28th Feb. 1968 as an international city dedicated to human unity and prior to the inauguration, the Mother made a conceptual sketch of the city with its 4 zones as the basis for the town plan for her architect Roger Anger to work with (fig-001 – hand sketch). The galaxy plan prepared in 1967 was exhibited as a scale model during the inauguration and several years later the models of the building of the Matrimandir and the Bharat Nivas was inserted into it (fig-002- pic galaxy model). The township is composed of a city area delineated into 4 zones centered on the Matrimandir and surrounded by a green belt. The project situated 12 kms north of Pondicherry, is being developed on lands purchased from the local landowners. There has been a steady effort in the last 35 years to set up a planning body that could organize the development in a manner that is not just responding to the needs as they emerge but also to anticipate the future needs. Unfortunately, it has not been possible to prepare an urban plan that allows for incremental growth with development regulations along with detail development plans, as some sections of the community believe this methodology will fragment and dilute the galaxy concept. The present development pattern is collection of loosely linked clusters of settlements that tend to be self-organizing with their own sub-cultures. This impacts the population growth, demographics and the governance structure at the larger level of the project.

To address this lacuna L’Avenir D’Auroville / Town Development Council of Auroville was mandated to undertake the urban planning to promote and facilitate the growth of Auroville in 2011. A proposal was presented by the lead consultant to undertake a study to identify the development priorities and directions of growth to enable the planning body to frame policies, design programs and formulate projects with annual budgets. The proposal was accepted by L’Avenir D’Auroville / Town Development Council of Auroville and work order issued on 21st March 2019.

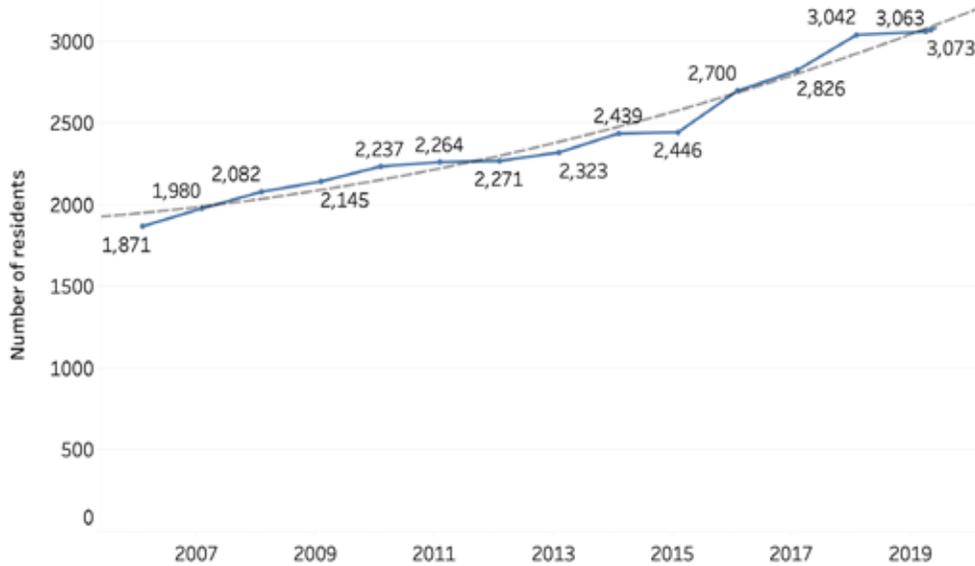


Fig-003-20190630-Growth rate (total population)

Fig-004-20190702-Decadal change in age (5-yr bins)

in the year 2008				in the year 2018				Change			
Age	Female	Male	Total	Age	Female	Male	Total	Age	Female	Male	Total
0-5				0-5	52	50	102	0-5			
5-10				5-10	78	78	156	5-10			
10-15	42	42	84	10-15	90	88	178	10-15	114.29%	109.52%	111.90%
15-20	58	70	128	15-20	80	98	178	15-20	37.93%	40.00%	39.06%
20-25	51	67	118	20-25	64	82	146	20-25	25.49%	22.39%	23.73%
25-30	35	34	69	25-30	77	81	158	25-30	120.00%	138.74%	128.99%
30-35	33	39	72	30-35	92	100	192	30-35	178.79%	156.41%	166.67%
35-40	60	71	131	35-40	142	122	264	35-40	136.67%	71.83%	101.53%
40-45	69	83	152	40-45	136	119	255	40-45	97.10%	43.37%	67.76%
45-50	71	99	170	45-50	135	139	274	45-50	90.14%	40.40%	61.18%
50-55	69	83	152	50-55	112	117	229	50-55	62.32%	40.96%	50.66%
55-60	81	66	147	55-60	103	94	197	55-60	27.16%	42.42%	34.01%
60-65	80	73	153	60-65	94	86	180	60-65	17.50%	17.81%	17.65%
65-70	58	74	132	65-70	71	94	165	65-70	22.41%	27.03%	25.00%
70-75	64	49	113	70-75	76	61	137	70-75	18.75%	24.49%	21.24%
75-80	34	39	73	75-80	35	44	79	75-80	2.94%	12.82%	8.22%
80-85	12	16	28	80-85	16	17	33	80-85	33.33%	6.25%	17.86%
85-90	6	6	12	85-90	6	6	12	85-90	0.00%	0.00%	0.00%
90-95	4	1	5	90-95	4	2	6	90-95	0.00%	100.00%	20.00%
95+	1	1	2	95+	1	1	2	95+	0.00%	0.00%	0.00%
Total	828	913	1741	Total	1464	1479	2943	Total	76.81%	61.99%	69.04%

B. Geography and Population

Understanding Geography, both the physical and human, is essential to be able to put into context the forces that shape development and population growth. The physical geography of Auroville’s township area and the regional context including the topography, geology, climate, vegetation and linkages to the human settlements with the inputs and outputs from them has been extensively mapped and documented, even if it has not been rigorously cross referenced and consolidated. (Ref: list of docs)

1- Resident population

Since the inauguration of the project in Feb 1968, the population of Auroville has been growing at an average between 3-4% per annum. For the scope of this study, the population data from period 2007 to 2019 was collected and analyzed. It was found that from 2007, the population has grown from 1,980 to 3,073 residents in 2019 (Fig-003-20190630-Growth rate (total population))

The population data for the period 2008 to 2018 was aggregated in age bins of 5 years; the growth rate for age groups of 15 to 55 yrs shows a slower increase compared to the 0-15 age group. (Fig-004-20190702-Decadal change in age (5-yr bins))

To analyze further the disproportion btw the decadal growth rate of dependent and working population, the population was segregated by gender and age bins of 0-20 yrs, 21-65 yrs and 65 yrs and above, to compare the increase in % of the productive population which is the age group of 21 to 65 yrs with the rest. The data then clearly indicates without course correction to facilitate youth and young adults to join, most of the revenue generated will be used to meet the operational expenditure with little surplus to invest in development. The resultant economic stagnation, if it spirals into a negative feedback loop would require interventions that might compromise the autonomy of the project. (Fig-005-20190702-Decadal change in age (graph))

Aromar Revi in his “Auroville Mission Notes 23 to 25 Jan 2007” makes an observation that “A lack of affordable housing and a possible deficit in available consumption expenditure from the basic ‘wage’ paid to Aurovilians are possibly serious constraints to younger people joining Auro-

ville and enabling the aspired growth in populations to a critical mass”. 13 years later this observation is validated by the decadal growth rate of 2008-18 of the age group 20-24 yrs old. Moreover, the existing governance and administrative structure discourages startups and small businesses that could help with employment and housing.

Depending on the development priorities adopted, targeted policies and programs could translate these priorities into a development plan, increasing the population growth and influencing the demographics. Any of the 3 projected growth rates - 4.88%, 5.50% and 7.00%, when translated into development targets within each sector for physical and social infrastructure development and economic growth will necessarily need to be interlinked for a resilient development. *(Fig-006-population-growth)*

Besides the resident population, there are 4 other types of population using the services and infrastructure developed and maintained by Auroville. They impact the development of Auroville in various ways and influence the development priorities directly and indirectly:

2-Tourist or day visitors

This population varies between couple of thousands a day to over ten thousand during holidays and special occasions, placing a demand on the essential urban services like roads, public parking, water, energy, sanitation, solid waste management and human resources to order and facilitate the flow. They are also a source of revenue through parking fees, food & beverage and sale of products.

3-On site guests, interns and volunteers

This group during certain periods of the year exceeds the resident Aurovilian and newcomer population, which places a demand not just on the physical and social infrastructure but also on cultural and educational institutions. This implies that the human resources engaged to serve the essential needs of the community must meet this additional demand and should be factored in the user population projections for the programs and projects.

4-Employees, vendors, goods & services delivery

Depending on the category, each of the above-mentioned floating popu-

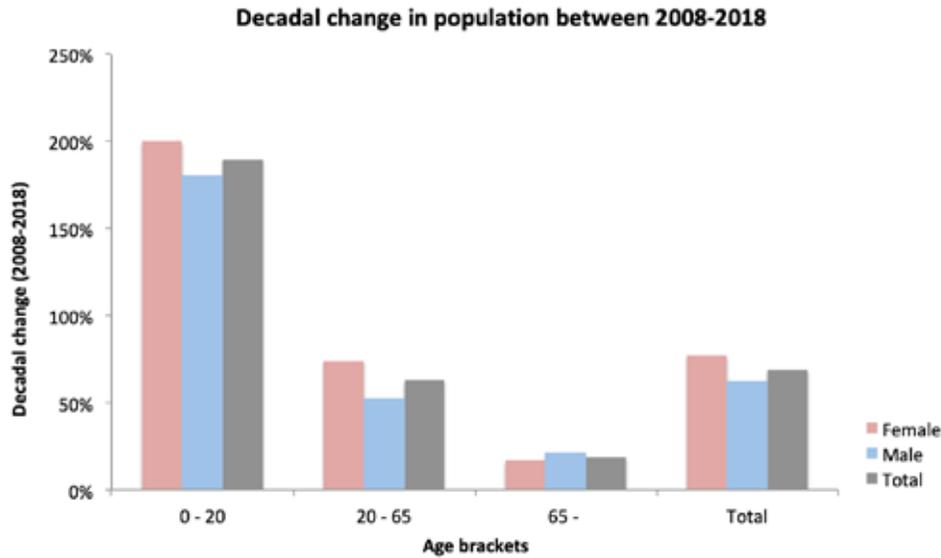
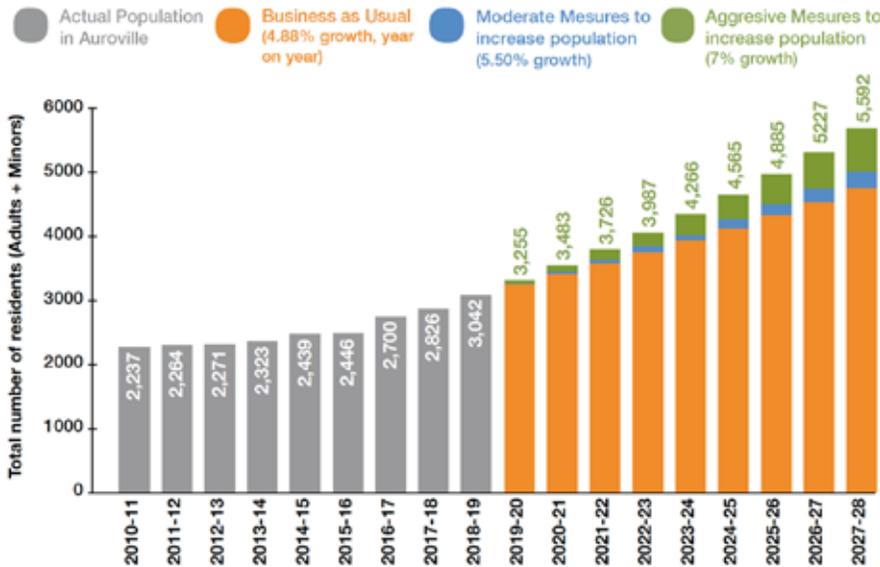


Fig-005-20190702-Decadal change in age (graph)

Fig-006-population-growth



lation use some of the essential services and infrastructure, they contribute to the growth and development, varying from direct employment, contracts and suppliers and such.

5-People from the settlements, urban and rural in the region.

To ensure the shared enjoyment of the commons, also called “Permboke” lands as per the state terminology and the preservation of the eco-system services for a sustainable co-existence, development priorities of Auroville will necessarily be entwined with local panchayat, block and district level development plans.

The Master plan prepared for Asia-urbs in 2003-ref: chapter 2- section 2.6: Demographic characteristics shows the population trend graph of 1968 to 2001 growing from 320 residents in 1974 to 1700 residents in 2003. Further on in chapter 4, section 4.2- assigned population table provides for a projected population of 5000 inhabitants in 2008 with 2/3 of these in the active working age group growing to a population of 50,000 by year 2025.

But 17 years after publication of the Asia-urbs report 2003, the population trends indicate that we may have about 5000 residents only by year 2030. This should be a convincing argument to undertake a complete review Auroville’s governance and developmental policies, priorities and programs.

C. Identifying the directions of growth and development priorities for 2021 – 26.

The consultants adopted a methodology that would be evidence based to identify the needs and gaps in the present development, to frame policies and programs that would address the developmental challenges in the mid & long term to enable Auroville to manifest the goals as laid down in the “Auroville Charter” and fulfill the vision that Mother detailed out in her “Dream”.

The work was taken up in 4 stages, post analysis of the population growth and demographics to quantify the existing development to the needs of the various age groups and identify the gaps, if any to prepare

development programs that would address these gaps.

Stage 1- Data collection and Analysis of existing situation for the period of 2008 to 2018 in 3 areas – (a) Economic (all domains and commercial sector) (b) physical infrastructure – water & energy (c) Social infrastructure (health / education / housing)

The data was collected from various working groups and agencies that record the investment and expenditure, including the number and profile of persons involved and/ or affected, maps and drawings of the development of land and buildings. Questionnaires and interview method was used in order to map the qualitative aspect of the existing development in meeting the needs of the population, to frame the projected needs.

Stage -02 - Using focus group sessions with informed individuals, we undertook group interaction to generate data and insights that would be unlikely to emerge in the primary data (questionnaires / interviews) and secondary data (population / gender / age) collection and analysis. The focus group session with 50+ persons was held on 11th Jan’20. The data from the stage 1 was shared, reflected upon and feedback was given on the scope / type of data collected and the resultant output. Small group table discussion took place about each of the three sectors and subsequently using dot vote method arrives at convergence on development directions and priorities.

Stage-03 – We undertook consultations with Auroville working groups, agencies and experts directly involved in the sectors studied. Auroville working groups members are selected or nominated by the residents, and they are expected to undertake governing, administering or regulatory tasks. All others are self-organizing voluntary group of individuals who are involved at the grass roots level and / or at the advisory level to the working groups as consultants depending on their capacity and availability. Each of the selected groups and individuals were presented with the study undertaken in the sector pertaining to their field of action comparing it with the population growth and demographics to share the -

1. The gaps and challenges in the sub-sector for the period studied and emerging developmental needs based on the projected population growth for the decade 2019- 2028.

2. Methodology used for identifying the development priorities and directions in each sector and its translation into policies - programs - projects.
3. The comparative evaluation of emerging sectoral policy and program planning on each other, co-related to the aggregated developmental benefits for the Aurovilian and effective / efficient resource use; human, natural and monetary.

Stage-04- Integrating the feedback of the focus group, working groups and experts, the output of the study will be presented to the residents for information, inputs and support in ratifying Auroville's developmental policies, programs and projects for the next decade. The Auroville Town Development Council (ATDC) could then appoint a consulting team of experienced urban planners to prepare the Auroville's "Detail Development Plan (DDP)" with annual budgets and resource mobilization strategy with this ratified "development priorities and directions for growth with policy / program / project framework".

D. Output of the stage 1, 2 & 3- data collection & analysis and consultation with focus & working group respondents.

D.1.a- Economy data analysis:

In Auroville economic activity is sub-divided in 2 categories: commercial and service. The "service" here should not be confused with the conventional sector classification as in primary (agriculture) – secondary (manufacturing / construction) – tertiary (service) sectors. The use of the word "service" within Auroville denotes to units and activities whose primary motive is to manage the development of physical & social infrastructure, undertake research, innovation, training and consultancy to building the knowledge services for Auroville to fulfil its intent as a city of the future.

For economic growth and development, capital formation is the key factor. Due to the nature of regulations the AV foundation Act, normal channels for accessing capital like borrowing from financial institutions or bringing in investors with profit sharing is not possible.

Despite these limitations the number of commercial units (manufacturing, construction, hospitality & restaurants) has increased from 165 to 377 or 128% increase in the decade of 2008 to 18 but there is only a 36% increase in the turnover during the same period and a net surplus increase at 19%. This could be because over 50% of the units are small enterprises, unable to build up capital for investment, diversification and growth, thus become non-viable at the worst or stagnate as one- or two-person self-employment enterprise.

The "service" units in Auroville provide some of the municipal / essential functions and / or non-contested public service within the Auroville, for example, the energy, water, roads, food distribution, basic clothing supply, community canteens and kitchens. These may have a regular budget provided by the Budget Coordination Committee with personnel whose maintenances are paid out from the city services. But some of them by providing services at non-profit basis and / or taking up projects generate income that is sufficient to cover their expenditure and surpluses that can be ploughed in to expand the scope and capacity of the service unit to gear up for the growing needs of Auroville.

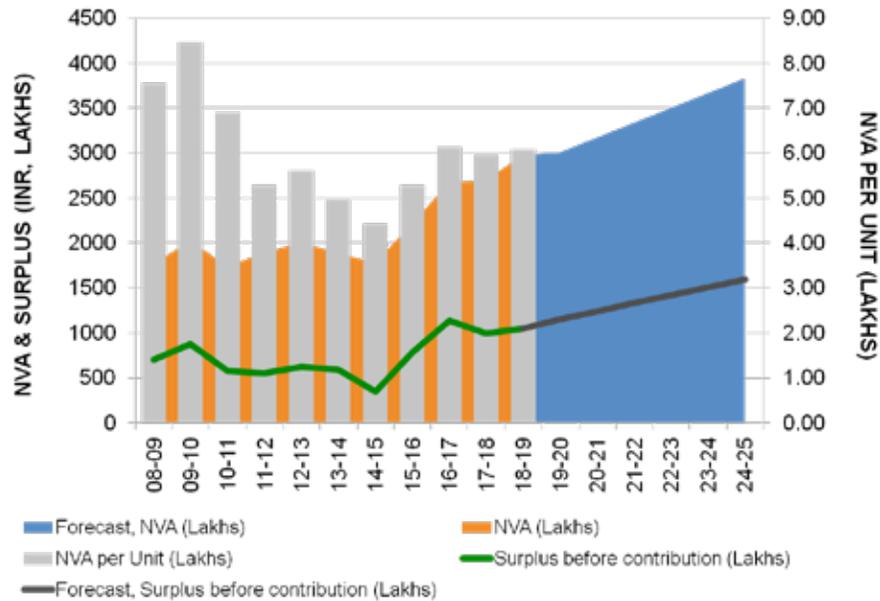
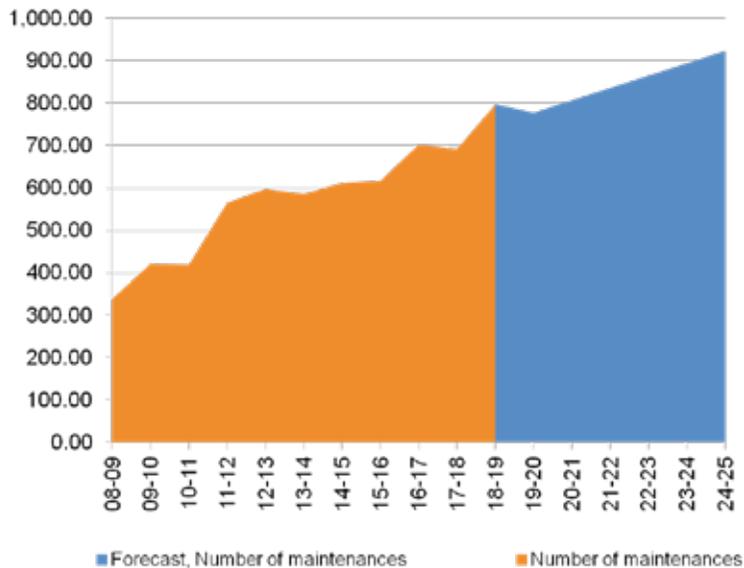


Fig-007-economy.all.domains

Fig-008-employment.all.domains



Comparing the net value added (NVA) of all the activities combined; commercial and service, it is evident that over 50% of the units have a NVA of 9 Lakhs and below with surplus of 2 Lakhs, as per 1995-96 baseline. The nominal figures (or you can call it actual or current prices) for 2018-19 would 4 times this at 36 Lakhs NVA and 8 Lakhs surplus (Fig-007-economy.all.domains)

If we project the employment using the trend generated with the 2008-18 data for both these sectors without counting the persons on city services maintenance, it is clear that it may not be possible to generate sufficient employment to absorb a population growth rate of more than 3-4%, which is what it has been since decades. (Fig-008-employment.all.domains).

And if the city services maintenances are also included in the projection of capacity to generate employment, it shows higher employment growth in the number of persons employed with city services budget than directly within commercial and service sector. This will create a bottleneck in the generation of capital for development as the BCC will face cash flow issue due to reduced contributions. (Fig-009-employment.all.domains.cs)

Fig-009-employment.all.domains.cs

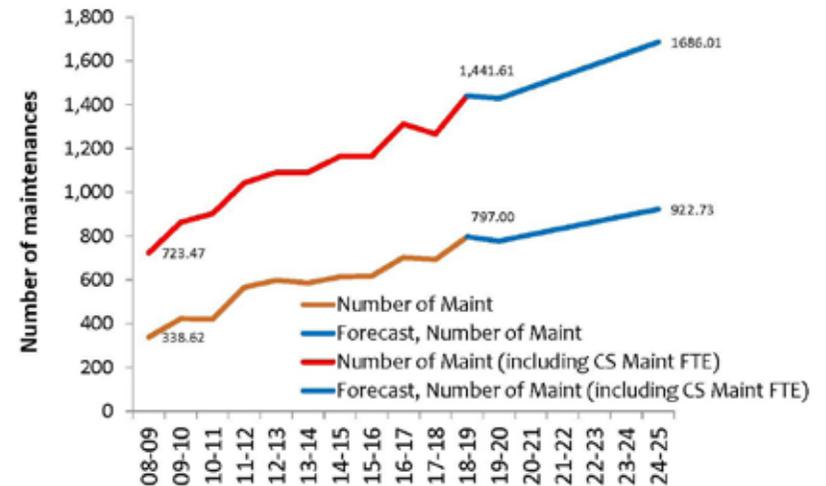




Fig-009A-Av.financial.service

domains.cs) (Fig-009A-Av. financial. Service)

NVA & surplus generated along with the employment of Aurovilians during the period 2008-18 was analyzed for only commercial units in architecture & construction, electronics and engineering, eateries, guest houses, handicrafts and handicrafts without Maroma.

Comparison of the decadal growth rate of development with population in various sub-categories from energy consumption to capital investment for the period of 2008 – 2018 reveals the lack of coherent policy planning linking economic development to physical and social infrastructure development. (Fig-010-decadal growth).

Comparing the turnover, net value added, total surplus, employment and surplus to NVA for the commercial units in Auroville for the period of 2008-18, there are indications of stagnation. (Fig-011-commerical. units-turnover-surplus) (Fig-011A-Arch&Design.DuStudio)

Fig-010-decadal growth

Item	2008	2010	2018	Assuming linear growth	
				2025	10-year growth
AV Master Plan (perspective: 2025)		15,000		50,000	156%
AV Master Plan Directions for Growth	5,000			50,000	529%
Data from Resident Service					
Total residents	1,741		2,943		69%
0 - 20 years	212		614		190%
20 - 65 years	1,164		1,895		63%
65 and above	365		434		19%
Data from AVES (kWh)					
Residential	780,062		2,417,397		210%
Pumps	124,910		232,134		86%
Education	22,837		184,434		708%
Commercial	421,130		916,238		118%
Data from Harini (INR, lakhs)					
Prosperity	211.58		599.94		184%
Culture	39.20		108.87		178%
Edn-schools	125.37		282.99		126%
Sports	1.48		40.61		2642%
Research	3.19		33.39		947%
learning, fitness & rec	169.24		465.87		175%
Administration	94.12		238.50		153%
Municipal Services	76.06		307.72		305%
growing township	170.18		546.22		221%
Outreach	7113.36		211.54		-97%
Total BCC exp	622.14		1823.58		193%
Data from Suhasini (INR, lakhs)					
GOI Grant Total Amount	514.43		1222.98		138%
					Extrapolated to 2028

Fig-011-commerical. units-turnover-surplus

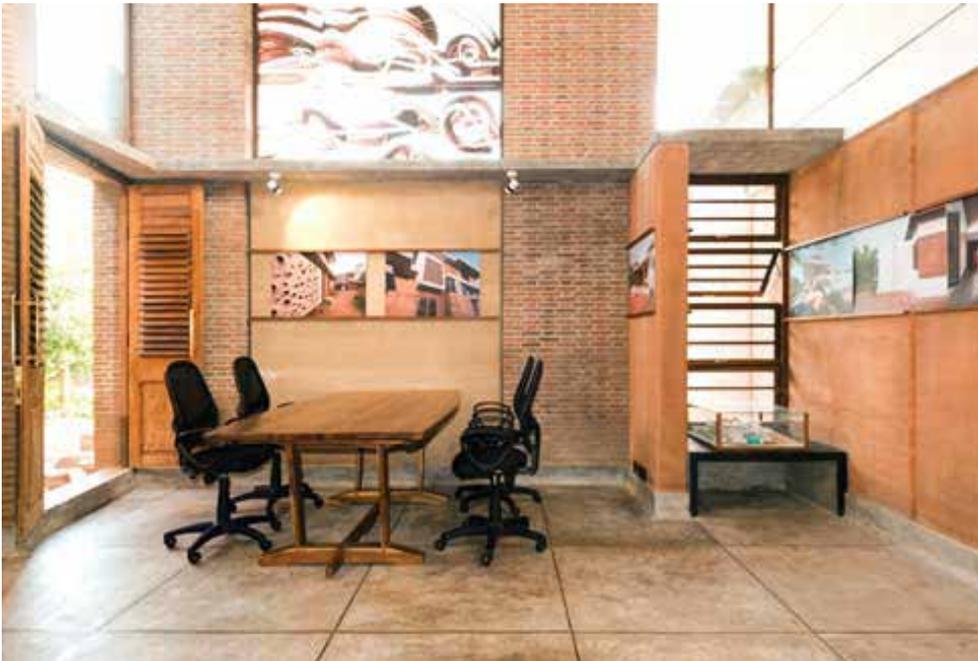
AVERAGE VALUES OVER 11 YEARS - 2008-2018													
COMMERCIAL UNITS	#of Units	Turnover	Turnover per unit	Surplus	Surplus per unit	NVA	NVA per unit	Nos of Maintai nance	Nos of Maintain ance per unit	NVA per Maint (Lab Prod)	Surplus per Maint	Surplus per NVA	Value added: Assets (Cap Prod)
		LAKHS			Aurovilians		LAKHS		ratios				
All domains (Comm + Services)	365	5944	17	747	2.04	2149	6.06	577	1.68	3.82	1.34	0.34	0.30
Total Comm Domain	265	3909	16	343	1.30	1271	5.02	371	1.49	3.44	0.93	0.27	1.13
Architecture and Construction	26	239	9	23	0.87	109	4.13	37	1.48	2.82	0.59	0.22	1.33
Electronics, Engineering & Consultancies	35	531	15	67	1.90	171	4.86	60	1.84	2.82	1.12	0.39	2.25
Eateries	14	217	16	33	2.43	77	5.36	21	1.74	3.48	1.48	0.42	1.68
Guest Houses	18	146	8	28	1.55	63	3.40	14	0.85	3.58	2.81	0.40	0.47
Handicrafts	48	894	20	83	1.73	317	6.88	63	1.39	5.06	1.33	0.26	1.35
Handicrafts minus Maroma	47	348	8	28	0.60	135	2.93	57	1.27	2.39	0.51	0.21	1.47

The present structure for economic development disincentivizes growth and employment generation. This coupled with the policy of a universal 33% contribution, prevents and penalizes investment in development echoing the license raj period of India. Not undertaking exercise of categorizing the economic activities by size, activity type and cycle will result in the best-case scenario of a stagnation of economic growth & development and in the worst-case scenario, a hidden and underground network of exchange of goods & services and asset creation to survive.

D.1.b- Output of the study based on economy data:

1. Ratio of surplus generated to net value added is low to moderate in almost all sectors.
2. Employment of Aurovilians in commercial units not in proportion to the population growth.
3. Lack of access to capital, limited developed sites and tedious pro-

Fig-011A-Arch&Design. DuStudio



cedures to obtain development permissions prevents expansion of existing units and discourages start-ups

4. Lack of legal and administrative support to meet the required regulatory conditions
5. Financial aid for supported skill development missing
6. Lack of sufficient housing stock for Aurovilians and non-Aurovilians, impediment to engage skilled persons

D.1.c- Inputs from the focus group respondents on the Auroville economy study:

Output from the focus group respondents.

1. Increase income generation activities to move towards self-sufficiency.
2. Identify the areas of economic growth and incentivize it (knowledge, food, tourism)
3. Investigate effective use of existing assets along with additional sources of financing / funding for start-ups and expansion.
4. Encourage economic development with (a) skill development & capacity building (b) access to capital & (c) shared working spaces for start-ups.
5. There were also inputs the address the social aspect of economic growth to ensure a more equitable society that provides for the basic needs of everyone.
6. Find a balance between the drive for more economic growth (income / capital generation) with experiments in economic systems.
7. Collective purchase and supply system for basic services to reduce unit cost.

(Fig-012-Focus gr. economy)



Fig-012-Focus gr. economy



D.1.d- Summary of the inputs from working groups consultation on Aurville economy study*:

Invited WG'S & individuals - FAMC, BCC, WC, ABC, ABS, GOI, Uli, Stephan, Roberta, Daniel, Inge, Suryamai, Mahi, Rathinam, Sauro, Carel, Isha, Toine, Hemant, Divya, Torkil, Manas, Chandresh, lyle, Mr. Srinivasamurty

Attendees at the consultation- Uli, Roberta, Daniel, Suryamai, Rathinam, Isha, Toine, Hemant, Chandresh & Lyle, Tejaswini (TDC rep) & Suhasini (study coordinator)

Inputs from the consultation was on the information presented, no additional information of insights emerged

1. External equity participation to generate capital
2. Venture capital using unit FD's including creation of Investment board/group to manage cross-unit investments
3. Business parks in industrial zone and offices space in residential zone
4. Incubators and support programs and creation of sub-units & activi-



ties with mentorship to facilitate growth

5. Management & skill training along with succession planning
6. Financial data on employment of Aurovilians in units
7. Public financing for infrastructure - energy (including smart grid) and water sourcing & supply
8. Hostels & service apartments for Non-Aurovilian collaborators, business partners and contract employees

* Unedited feedback is documented in the appendix

D.1.e- Recommended economic policy – programs – projects: -

ECONOMY		
Policy	Programs	Projects
1. Regulation to set up venture capital fund (unit FD's / external equity)	1. Investment board to manage cross-unit investments	1. Developed land with infrastructure for manufacturing units
2. Amendment to Auroville contribution policy to encourage growth and investment	2. Supported management and skill development programs embedded within units	2. Business parks with rental spaces for offices and assembly
3. Amendment to Auroville housing & maintenance Policy	3. Incubation programs for start-ups	3. Management and Skill development institute with internships for youth (Av, local area & volunteers)
	4. Housing program, including service apartments for rental by Newcomers, Aurovilians and long-term collaborators	4. Housing projects - studios, hostels, service apartments & houses
	5. Succession program	

D.2.a- Water data analysis:

Auroville is dependent on ground water pumped from a diversity of aquifers to supply the water for its needs. This source is rapidly depleting due to the dissymmetry between the quantity recharged and quantity pumped out to meet the demand in the region. The depleting ground water along with sea water intrusion into the aquifers have been extensively documented and disseminated by various organizations and agencies. But neither the authorities nor the people living on this coastal plateau have internalized the alarming situation to undertake measures to arrest the irreversible damage. The failure to comprehend the developing water crisis is rooted in the human inability to act today taking into account a future impending disaster as it requires a drastic structural re-think in terms of politic and changes in the socioeconomic set up. Present land use around Auroville is driven by market value of the development potential and within is driven by a combination of ideology and precedence. Both these ignore climate change at their own peril. Before pre-fossil sourced energy times settlement location, planning and development was based on a system of passive rainwater harvesting in series of waterbodies, to be tapped using shallow open wells with filtration using soil minerals and microbes for potable and other water needs. With this system, Tamil Nadu had high density of population, without perineal riverine system. (Fig-013-Map. watershed & tanks - AV region)

Auroville has implemented surface water management to control run-off using bunding and afforestation to improve percolation since 1970's. But this will not ensure the supply of water needs for its growth and development in a water deficit zone. If urban planning does not prioritizes capturing of surface water as one of the primary sources of water supply for the development of Auroville, the goal being the "city the earth needs" will remain a dream. (ref: 2013- Surface Water as a Resource for Auroville City Area - A study exploring a multi-sourcing approach for Auroville with the integration of Matrimandir Lake. Gilles Boulicot, Pieree Taillandier, Pierre Veillat & others – CSR Auroville).

Assessing quantitative and qualitative data on Auroville's water consumption is presently next to impossible due to varying ways of quantifying the water supplied, the diversity of supply networks, some of which are not mapped and /or lack of consistent data records. The only reliable

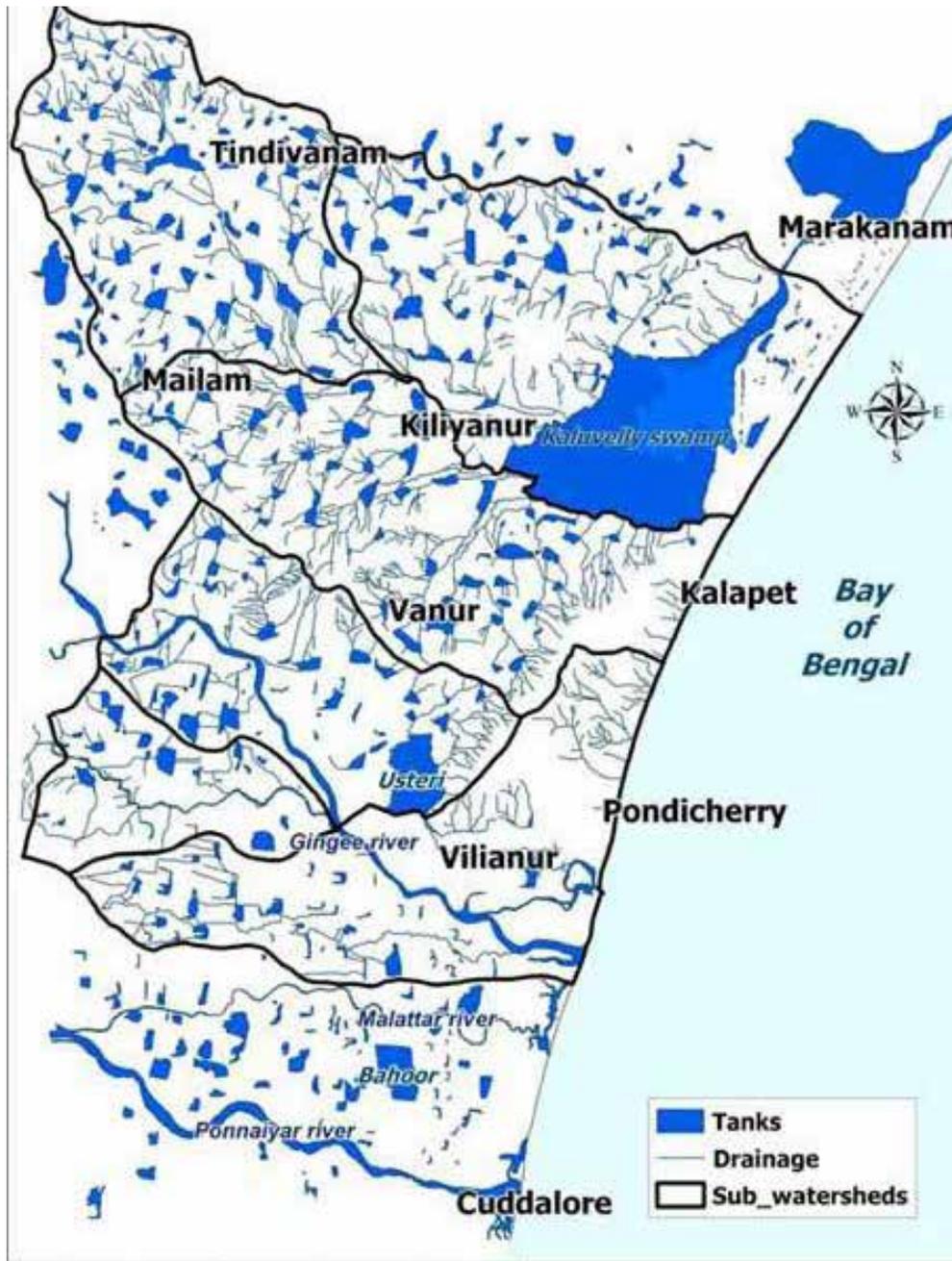


Fig-013-Map. watershed & tanks - AV region

and continuous data that could be accessed was the energy bills from the pumps installed in the bore wells. For the sake of the study, energy used for pumping water from bore wells has been taken as the unit quantification for per capita water consumption. (Fig-014-water.per.cap). Using the energy consumption as the base to derive the per capita water used far from ideal. The drop and draw of water in bore wells is dependent on multiple factors, so the energy used by similar pumps could have large variations to pump the same quantity of water.

The mapping of the variation in the unit energy used by the pumps in the various bore wells (Fig-015-water.map-2010-11) (Fig-016-water.map-2017-18) in the Auroville master plan area between the years 2010-11 and 2017-18 was done to evaluate the increase in development in each area, as with the energy map. But unfortunately, as there is no data being maintained on number of persons or type of activity in each of the settlements, making it is difficult to co-relate the water consumption quantitatively or qualitatively to the development.

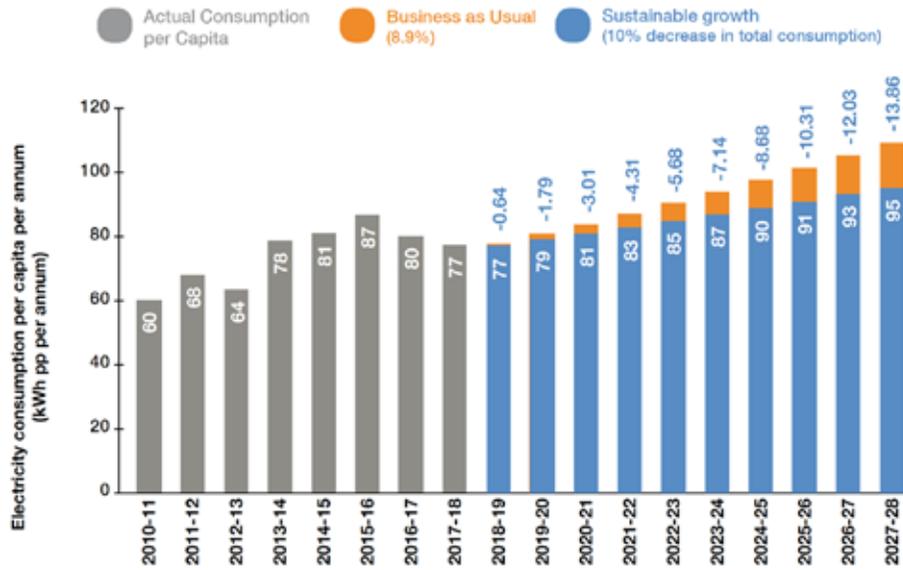
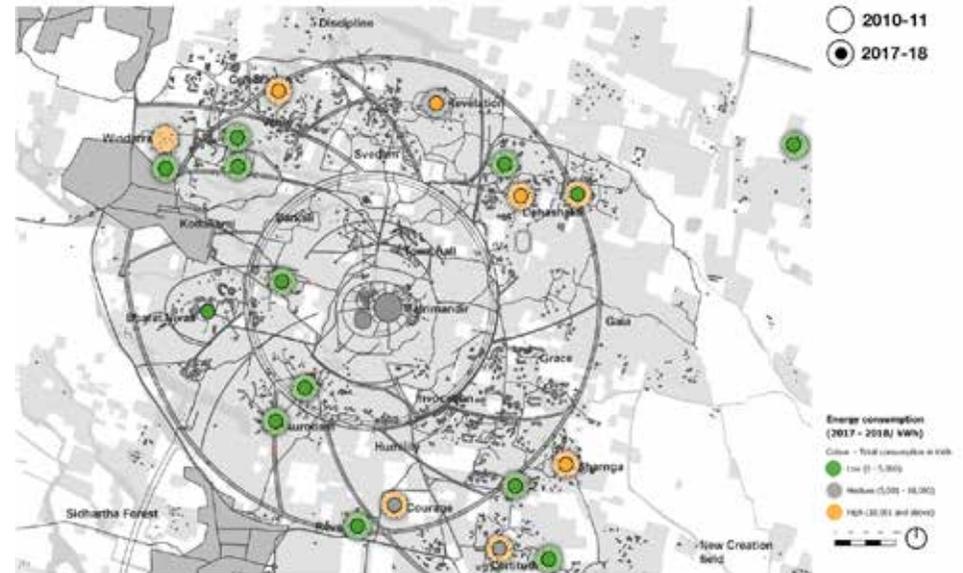


Fig-014-water.per.cap

Fig-015-water.map-2010-11)



Fig-016-water.map-2017-18



D.2.b- Output of the study based on water data:

1. Multiple groups and agencies involved in water resource management with little or no shared standard operating procedures.
2. No standardized system of water pumping and consumption quantification
3. Supply networks not co-related to population & activity, dearth of consumption data impedes evidence-based infrastructure planning and development.
4. Land use and development plans ignore topography, preventing zonal and city level surface water management to enable source diversification to wean off from complete dependence on ground water resources

D.2.c- Inputs from the focus group respondents on the Auroville physical infrastructure study:

1. Without data collection and management system, a standardization to allow for an accurate analysis on sourcing and supply is not possible. And in the absence of reliable data on the ground water resources and consumption it is not possible to undertake preparing a water plan for Auroville.
2. Development policies with regulatory mechanisms needed for water conservation and efficiency
3. Maximum surface water management and source diversification to ensure reliable and sustainable water supply for Auroville
4. Finally; Auroville's economy has to set into place an "in-kind" budget that integrates energy – water – food to ensure a resilient development

(Fig-017-Focus.gr-energy. water. food)

D.2.d- Summary of the inputs from working groups consultation on Auroville water study*:

Invited WG'S & individuals - Tency, Guilio, Tom, Lucca, Roberta (bobby), Alok, Kireet & Inge Marie

Attendees at the consultation- Tency, Guilio, Tom, Roberta (bobby), Alok, Kireet & David, Tejaswini (TDC rep) & Suhasini (study coordinator)

Inputs from the consultation was on the information presented, no additional information of insights emerged

1. Surface & roof water capture with swales and ponds for aquifer recharge
2. Accurate mapping of existing network of water distribution network
3. Standardized metering of water consumption including irrigation to enable demand vs source evaluation
4. Identification of recharge areas and protection from pollution.
5. Safely integrate treated wastewater network for local reuse to provide for specific water demands.

Fig-017-Focus.gr-energy. water. food





6. Skill development to establish trained persons to operate, manage and administer water supply

* Unedited feedback is documented in the appendix

D.2.e- Recommended water policy – programs - projects: -

WATER		
Policy	Programs	Projects
1. Regulation & standardising of source, supply and consumption	1. Standardised metering at points of supply & consumption, including irrigation, to enable demands vs sources data collection and management.	1. Map of pipeline network for each community / settlement
2. Potable water security with conservation & multi-sourcing	2. Provide uninterrupted and efficient water supply networks.	2. Smart water metering and with web-based interface for data access
3. Mandatory recycling of sewage with decentralised water recycling to reduce potable water demand	3. Water conservation measures combining consumer awareness and pricing slabs.	3. Land-use plan integrating surface, roof and road run-off rain water capturing in swales and ponds for recharge and direct use.
4. Develop resilient water system	4. Plan for recycled water use in toilets by 2025	4. Identification and protection of recharge zones in the land use plan.
		5. Provide for recycling systems in all existing and new developments and rehabilitation of existing recycling systems.

D.3.a- Energy data analysis:

Where and how much energy is being generated, distributed and / or consumed by whom and for what purpose provides a good indication of the development of a settlement; both type and standard. Due to various factors only data on the energy supplied by the local grid (TNEB) was collected from the Auroville Energy Services which maintains records on consumptions via the centralized billing service, categorised as per regulations into various type of users – domestic, pumps, education and commercial since 2013. As the energy generated by PV, either in stand-alone or grid connected is not systematically collated it, therefor it could not be integrated in the study.

The consumption data when correlated to the population shows a combined per capita consumption increase from 1467 kWh in 2013 to 2097 kWh in 2018-19 with projection depending on the conservation, efficiency and diversification could reach 4000 kWh by 2028(Fig-018-energy. proj. percapita-2028). Based on figures that are available for 2015, Auroville’s per capita consumption of 1760 kWh is higher than the Indian average of 1010 kWh, indicating a higher level of development but is only 56% as compared to the per capita consumption for the same period in China, where 44% of the GDP is generated by the secondary sector (construction and manufacturing). Being a non- manufacturing or industrial economy, most of the load in Auroville tends to be domestic and what is classified as tertiary sector (service). (Fig-019-20190717-Electricity consumption per capita) If actively promoted with policy and investments, grid connected solar PV systems could offset considerably of the load requirement of Auroville along with providing energy security.

Furthermore, mapping the load increase with location in the designated city area of the Auroville master plan zone from 2010-11 to 2017-18, it is possible to isolate areas that have seen the most development. Unfortunately, as there is no data being maintained on number of consumers at each point of consumption it was not possible to co-relate the type of load quantitatively or qualitatively to the development. (Fig-020-Energy. map-2010-11) (Fig-021-Energy.map-2017-18)

D.3.b- Output of the study based on energy data:

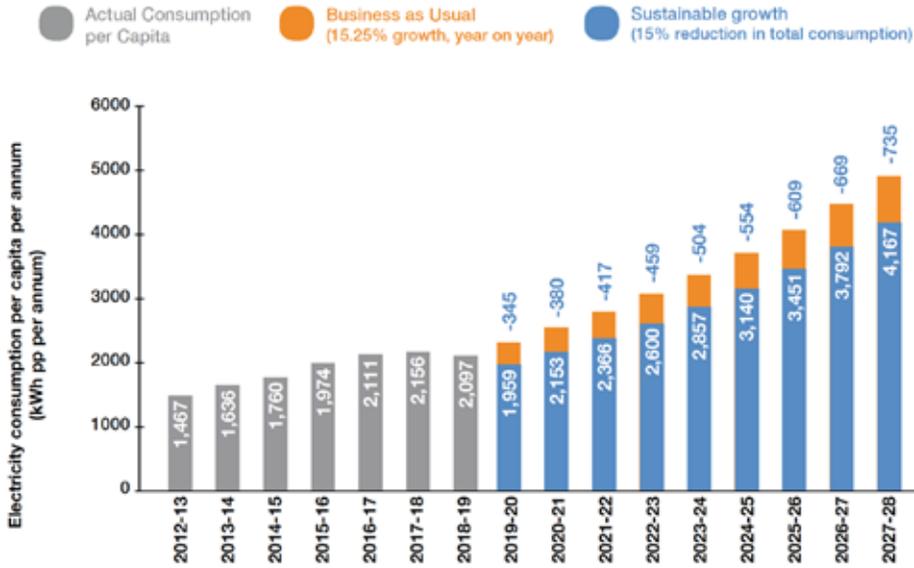


Fig-018-energy. proj. percapita-2028

Fig-019-20190717-Electricity consumption per capita

Item	2008	2010	2018	2025	ASSUMING LINEAR GROWTH	
					10-year growth	Extrapolated to 2028
AV Master Plan (perspective: 2025)		15,000		50,000	156%	
AV Master Plan Directions for Growth	5,000			50,000	529%	
Population numbers						
Total residents	1,741		2,543		69%	4,975
0 - 20 years	212		614		190%	1,778
20 - 65 years	1,164		1,895		63%	3,085
65 and above	365		434		19%	516
Electricity consumption (kWh)						
Residential (domestic)	780,062		2,417,397		210%	7,491,466
Pumps (water)	124,910		232,134		86%	431,400
Education	22,837		184,434		708%	1,489,508
Commercial	421,130		916,238		118%	1,993,427
Per capita electricity consumption (kWh pp)						
Residential (domestic)	448		821		83%	1,506
Pumps (water)	72		79		10%	87
Education (total residents)	13		63		378%	299
Education (0-20 age group only)	108		300		179%	838
Commercial (total residents)	242		311		29%	401
Commercial (20 and above only)	275		393		43%	562



Fig-020-Energy.map-2010-11

Fig-021-Energy.map-2017-18



1. No conservation policy with development regulations for domestic, commercial, manufacturing and agriculture
2. Data on consumption not correlated to population or category
3. Lack of land use plan with development plans preventing incremental energy infrastructure planning and development.
4. Solar energy generation capacity development is exemplary
5. No capacity building for conservation in development sector

D.3.c- Inputs from the focus group respondents on the Auroville physical infrastructure study:

1. Integrated data management – Most of the respondent expressed their dissatisfaction on the incompleteness of the data collected and analysed. The lack of a systematic data collection that integrates the renewable energy generated; stand alone or grid connected along with the user quantification needs to be remedied to enable a more informed decision making for planning.
2. Development policies with regulatory mechanisms needed for energy conservation and efficiency is imperative for sustainable development
3. Maximum local distributed energy from renewable has to be the way forward
4. Finally; Auroville's economy has to set into place an “in-kind” budget that integrates energy – water – food to ensure a resilient development

(Fig-011-Focus.gr-energy. water. food)

D.3.e- Summary of the inputs from working groups consultation on Auroville energy study*:

Invited WG'S & individuals – Ponnuswamy & Prassana (AVES), Toine & Martin.S (Av. Consulting), Manikandan & Sreevatsa (TDC), Rishi (sunlit future), Tejaswini (TDC rep) & Suhasini (study coordinator)

Attendees at the consultation- Ponnuswamy & Prassana (AVES), Toine & Martin.S (Av. Consulting), Manikandan & Sreevatsa (TDC), Rishi (sunlit future), Tejaswini (TDC rep) & Suhasini (study coordinator)

Inputs from the consultation was on the information presented, no additional information of insights emerged

1. Categorisation of electrical energy growth should be changed in the study to Residential, Institutional (offices, schools, libraries, collective kitchens and other services), Commercial & Industrial, Agricultural, Municipal Services



2. Introduce a reducing growth factor or set a ceiling in absolute numbers and make 2 – 3 scenarios with different degrees of e-mobility growth

3. Text edits

* Unedited feedback is documented in the appendix

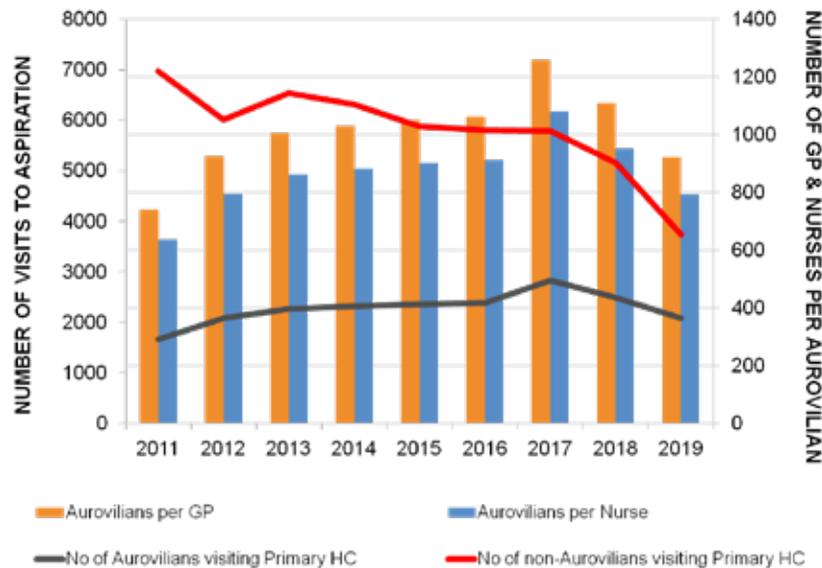
D.3.e- Recommended energy policy- programs- projects: -

ENERGY		
Policy	Programs	Projects
1. Sustainable electrical energy for all	1. Efficient distributed and connected energy generation and storage systems with demand monitoring and response	1. Planning, development and installation of distributed generation and storage systems with demand response integration.
2. E-mobility	2. Auroville building codes and development plans to include provisions relating to energy conservation and efficiency.	2. Sourcing, distribution, repair and recycling of BEE rated appliances, fixtures and consumer durables.
3. Agriculture	3. Capacity building for energy conservation and efficiency for planners, developers, architects and consumers	3. Financing facilities for renewable energy generation and storage assets;
	4. Replace existing fossil-fuel mobility with e-mobility;	4. Financing facility for the procurement of e-vehicles;
	5. Energy efficiency in irrigated farms	5. Migration to precision irrigation with energy efficient pumps with renewable energy generation



Fig-022-Av.HC building

Fig-023-Av.HC.patient.FF



D.4.a- Health data analysis:

Auroville has two established health centres; Auroville Health Centre in Aspiration established in 1973 and Santé - established in 2014. The study collected secondary data on number of persons who accessed both these centres for consultation during the period of 2008-18. Primary data was collected on the personnel attached to each of these centres with their qualifications, total hours of work per day/week and scope of services provided for the treatment of diseases, chronic conditions and injuries along with consultation and recommendation for secondary and tertiary care supported with basic lab facilities for water borne diseases and chronic condition needs. This was compared to the WHO standards of number of doctors & nurses for populations along with on-site and off-site facilities available to meet the needs of the populations.

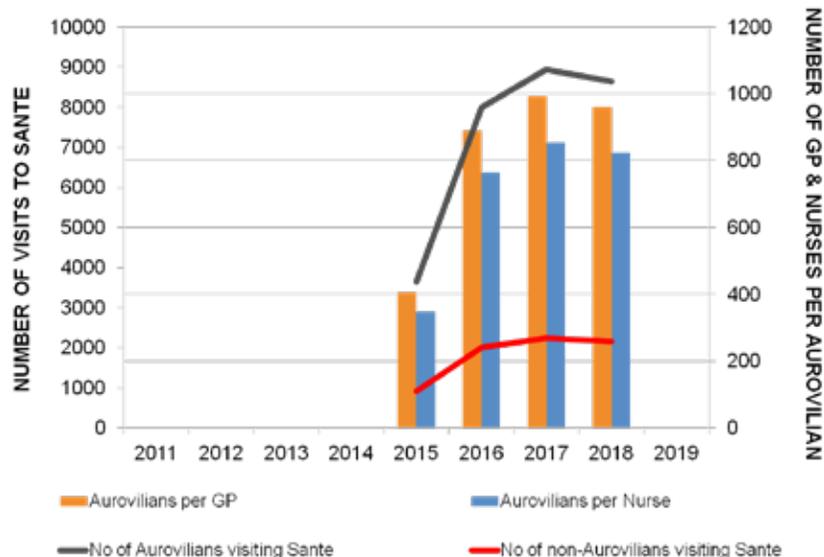
D.4.a.1 – Auroville Health Centre, Aspiration. (Fig-022-Av.HC building)

1. From 2011 to 2018; the number of villagers using the centre has been declined by 35%, most probably because of the number of private hospitals and clinics that have established themselves in the region. The numbers of Aurovilians visits have increased by 33% during the same time period
2. The WHO standard is 1 doctor to 1000 patients & 1 nurse to 500 patients. Since 2014 the ratio of patients to doctors and nurses is not as per standards
3. The data base maintained does not classify the patient by number of visit by the same person per annum, age group, gender, type of consultation and the secondary/ tertiary recommendations.
4. The program of the data does not cross reference with health fund or with resident service register.
5. Counseling service to help choose the best fit medical facility in the region for secondary / tertiary care absent
6. Inoculation services and programs undertaken but demand is low
7. Nursing and paramedical internship and training programs absent



Fig-024-Sante-bld

Fig-025-Sante.patient.FF



(Fig-023-Av.HC.patient.FF)

D.4.a.2 – Santé, Residential zone sector 1 (Fig-024-Sante-bld)

1. Established in 2014 and service provided only to Aurovilians, new comers and registered guests. Data on number of patients treated available from 2016.
2. 2016 to 2018; 3-year data shows the numbers of Aurovilians & NC visits have decreased by 13% and registered guest visits have dropped by 13% too.
3. The WHO standard is 1 doctor to 1000 patients & 1 nurse to 500 patients. The ratio of patients to doctors and nurses is within the standards.
4. The data base maintained does not classify the patient by number of visit by the same person per annum, age group, gender, type of consultation and the secondary/ tertiary recommendations.
5. The program of the data does not cross reference with health fund or with resident service register.
6. Counselling service to help choose the best fit medical facility in the region for secondary / tertiary care absent
7. Inoculation services and programs not undertaken
8. Nursing and paramedical internship and training programs absent

(Fig-025-Sante.patient.FF)

D.4.a.3 – Auroville Health Fund:

1. This is a fund set up before 2008 where in Aurovilians and new comers contribute on a monthly basis to a health fund to cover the expenses incurred for diagnostics, secondary and tertiary health care. There are regulations on the type and limitations of expenditures reimbursed including requirement of recommendations from one of the practicing doctors from AvHC and Santé facilities before availing of diagnostics or treatments.

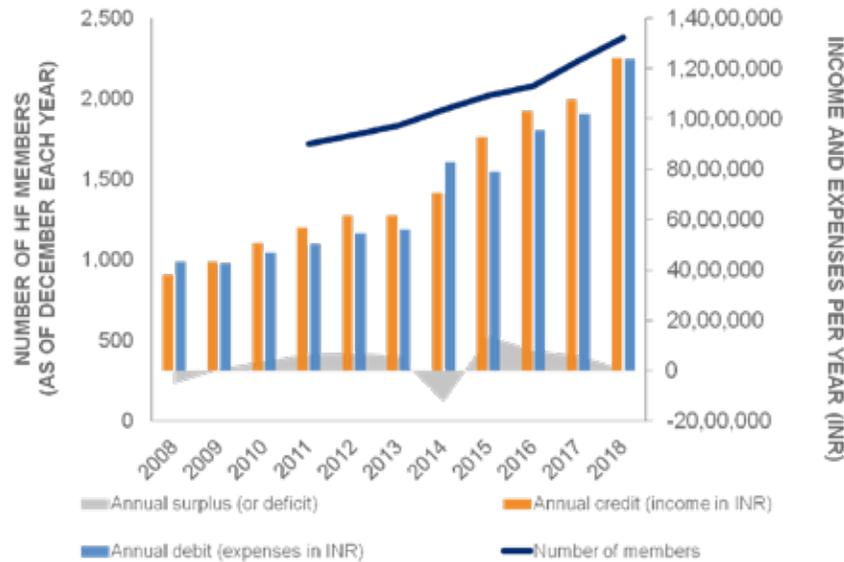


Fig- 026-Health.fund

Fig-027-Focusgr.health.edu.housing



- The management group that regulates the scrutiny and disbursement of the bills and expenditure works in close coordination with the doctors of the 2 health care facilities.
- The data base maintained by the financial service records only the contributions of the persons to the fund and the disbursements made. There is no classification or grouping system based on age, gender or type of secondary / tertiary care required to understand if there is a prevalence of certain category of infectious and chronic diseases.
- Lack of counselling service to help choose the best fit medical facility in the region for secondary / tertiary care does not permit dedicated facilitation between the patients and the hospitals in the region. This causes unnecessary expenditure and exploitation by the private health business with superfluous diagnostics and treatments.
- The surplus from year to year is not sufficient if there is unprecedented increase in expenditure due to mass health crisis such as epidemics.

(Fig- 026-Health.fund)

D.4.b- Output of the study based on health data:

- Lack of standardized data collection and centralized repository of the residents' health is a serious impediment to better, efficient and economically viable health care system.
- Access to primary health care via the present centers limited due to lack of sufficient and appropriate health care professionals.
- Secondary and tertiary health care needs and expenditure data not correlated to intervention (emergency, contagion, chronic, gender and age) via the health fund, difficult to evaluate the cost – benefit ratio of the fund.
- Lack of organized counselling and established network for patients to access the most appropriate regional secondary and tertiary health facilities.

5. Management and funding in case of epidemics and pandemics ad hoc.

D.4.c- Inputs from the focus group respondents on the social infrastructure (health – education - housing) study:

The focus group respondents chose to focus on issues that did not pertain to the primary health care or the health fund issues. The output was as follows

1. Senior health and assisted living care
2. Urban planning that promotes active physical life to reduce chronic health issues arising from sedentary life

3. Focus on mental health care

(Fig-027-Focusgr.health.edu.housing)

D.4.d- Summary of the inputs from working groups consultation on health study*:

Invited WG’S & individuals – Paula (Health service & health fund), Uma & Dr. Sathpathi (health Center), Ayesha, Sumeet & Brian (Sante), Alok & Srijita (Ambulance team), Suriyagandhi (health and healing trust), Prashant (Covid task force), Dan, Naren & Saif (Mattram team), Sreevatsa & Lakshay (TDC)

Attendees at the consultation- Dan, Sreevatsa, Srijita, Alok M, Lakshay, Jerry, Saif, Paula, Sumeet, Prashant, Naren, Induja, Tejaswini (TDC rep) & Suhasini (study coordinator)

Inputs from the consultation was on the information presented, no additional information of insights emerged.

1. Universal data collection system needs to be put in place to better read and understand the collected data with categorization on type of care provided; primary health care and scheduled wellness care.
2. Directory of health professional and therapist should be maintained.

3. Need a comprehensive health policy that covers data mng, funds, emergencies, practices and philosophy based on mother’s insights.
4. Need to establish Auroville ethics and codes for health practitioners and residents
5. Need more supported training for elderly care and GP / paramedics for house visits

** Unedited feedback is documented in the appendix*

D.4.e- Recommended health policy- programs- projects:

HEALTH		
Policy	Programs	Projects
1. Comprehensive health policy	1. Uniform and universal health care data collection and management	1. Health data centre to anticipate, plan and efficiently provide primary health care.
2. Accessible health care service	2. Primary health care with 9 to 5 for 6 days a week an attendant GP for treatment of injuries, water borne diseases and chronic condition needs	2. Investment in supported training for Auroville youth in health care (doctors, nursing and paramedics).
3. Financially robust Health fund	3. Increased inputs in geriatric and metal health service as an extension program, including house visits	3. Active community support groups during emergencies, epidemics and disaster.
	4. Effective & efficient facilitation for secondary / tertiary care	4. Counselling service.
		5. Network with regional secondary / tertiary medical centre for efficient and economic treatments.



Fig-028-education.Transition.school

Fig-029-education.Deepanam.School



D.5.a- Education data analysis: (Fig-028-education.Transition.school)
(Fig-029-education.Deepanam.School) (Fig-030-education.Future.School)

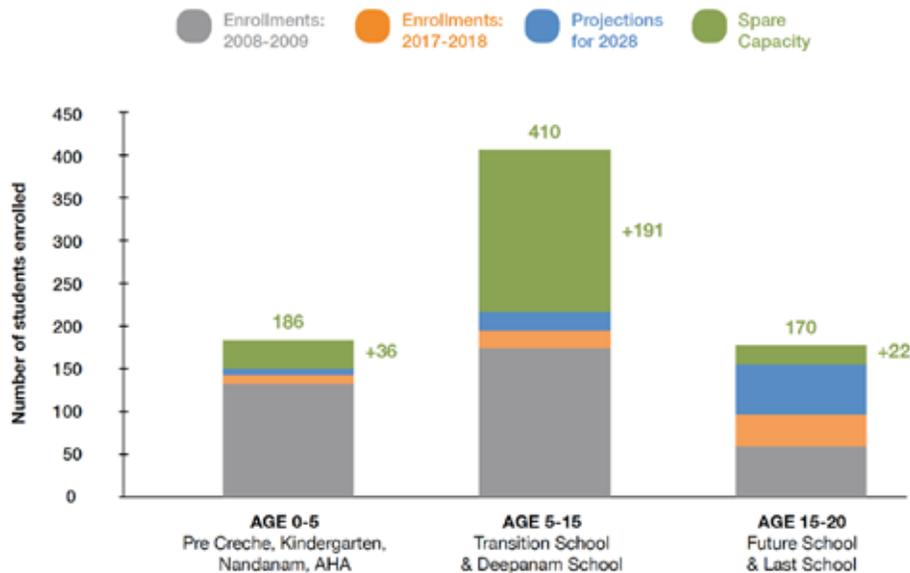
In the education sector, the primary data collection evaluated the education facilities available for primary, secondary and senior secondary or high schools. This included the documentation of the spaces available from class rooms including size and occupancy, library, labs, art and multipurpose spaces, teaching and administrative staff spaces and dining spaces. Using questionnaires, we documented the number of teaching, administrative, facility management and support staff to the number of students. The number of hours each school spaces was used was also documented. This was then compared to the specified standards for IB program schools to evaluate the built-up space to per student in Auroville schools. Secondary data on enrolment was collected either from the schools and / or from SAIER from the year 2008 to 2018; this was then compared to the resident population of the age group of 0-20 yr to evaluate the % of children in Auroville to the numbers enrolled in the schools.

1. For the year 2008; the population data for 0–10-year-olds was not available while for the 11-20 yr old was 106 persons but the enrolment in that age group of approximately 130. Either there is an error in the population data or about 24 non-resident students were enrolled in the middle and high school level.
2. For the year 2018; the total resident population for the age group of 0-20 is 614 persons and the total enrolment in Av schools was 429. The enrolment drops sharply at the high school level. The reasons for this could be students opting to finish their high school education in schools outside of Auroville.
3. Comparative evaluation of the built-up spaces of all the schools as in the year 2018 with the projected population for the next decade up to 2028, shows that the available built-up space should be sufficient to absorb the needs for the next 10 years.
4. But functional space evaluation shows that the class room space design is too specific, not allowing multi-functional space usage which is essential as the number of students increase. An audit of building design along with evolving functional usage over 10 years should be



Fig-030-education.Future.School

Fig-031-education.enrolment.capacity



undertaken to evolve school design standards for Auroville.

(Fig-031-education.enrolment.capacity)

D.5.b- Output of the study based on education data:

1. Lack of diversity of curriculum & insufficient teaching staff leading to high dropouts between middle and high school
2. Responsibility of school management & administration delegated to teachers without prior training and capacity building.
3. Inadequate social & economic support to teachers & students, leading to absence and divided focus
4. Most of the schools managed as silos; capital investment duplication, underutilized spaces and human resources development is underfunded.

D.5.c- Inputs from the focus group respondents on the social infrastructure (health – education – housing) study:

1. Higher education and skill development to increase capability. Values and norms to ensure informed participation in Auroville's organisation and governance.
2. Improve the organisational structure to ensure reliable and sustainable health care covering primary and elderly health care along with mental health.
3. Evolve strategies for generate investment in housing.

(Fig-027-Focusgr.health.edu.housing)



D.5.d- Summary of the inputs from working groups consultation on education sector study*: Invited SAIER board only

Attendees at the consultation- Sanjeev, Chali, Sauro, Lucas, Manas, Jean Yves, Divya (SAIER BOARD), Sreevatsa (TDC), Tejaswini (TDC rep) & Suhasini (study coordinator)

Inputs from the consultation was on the information presented, no additional information of insights emerged

1. Before suggesting limitation of capital development/buildings for schools, the specific approach to education needs to be considered.
2. Growth of programs and projects depends on human resources so focus is needed on how to support that growth in a steady, healthy and balanced way.
3. It is helpful to identify priorities without excluding other projects and needs that weren't planned for or foreseen ahead of time.
4. Might be useful to identify what would be needed from other sectors that would support development in education.

* Unedited feedback is documented in the appendix

D.5.e- Recommended education policy- programs- projects:

EDUCATION		
Policy	Programs	Projects
<p>1. Formal, non-formal and informal education aligned with Auroville's material and spiritual developmental needs.</p> <p>2. Higher education opportunities for Auroville youth and adults.</p>	<p>1. Programme for skill development aligned with anticipated needs of Auroville's service and commercial units.</p> <p>2. Programme for sustained and systematic teachers' professional development irrespective of level of teacher capacity.</p> <p>3. Programme to support non-formal and informal learning.</p> <p>4. Higher education programme in Auroville.</p> <p>5. Partnership programme with universities.</p>	<p>1. Comprehensive mapping of skill requirements, both current and anticipated & setting up of an institutional structure for skill development.</p> <p>2. Creating a framework for teacher professional development unique to Auroville's needs & setting up of an institutional structure for teacher professional development</p> <p>3. Setting up a higher education programme using existing facilities and people with education and career counselling centre</p> <p>4. Identifying universities for partnerships in learning credits, student exchange and research.</p> <p>5. Setting up a coordination centre for applied research and training centres in Auroville</p>



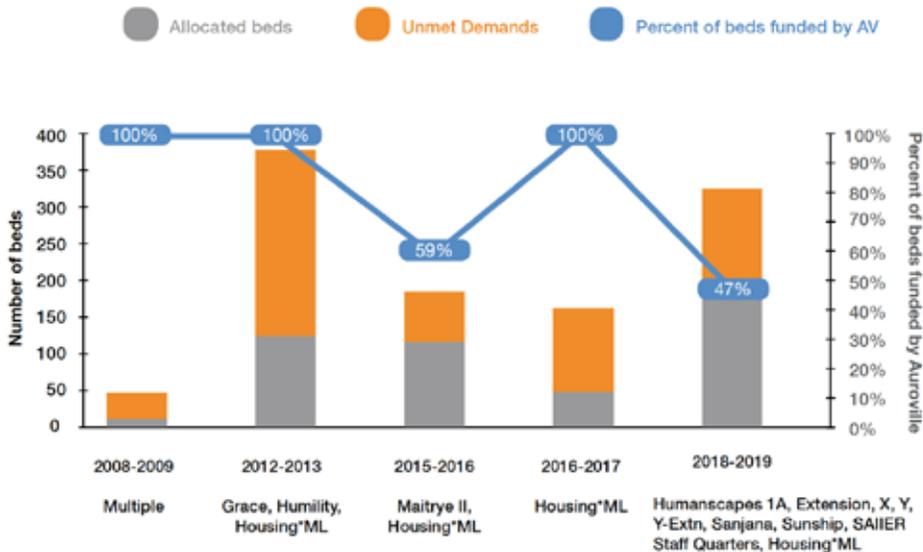
Fig-32-housing.humanscapes

D.6.a- Housing data analysis: (Fig-32-housing.humanscapes)

The Auroville population demographics indicate that over 50% are in the age group of 20- to 50-year-olds. The anecdotal reports and studies indicate that the main bottleneck to join Auroville for this age group is the lack of housing. Due to limited number of housing projects in the pipe line, lack or insufficient capital with the persons interested to join Auroville and lack of incremental housing projects, housing has become a major road block in the growth and development of Auroville.

Another impediment to investment in housing stock in Auroville is the economic policy that does not incentivise investment in housing and infrastructure. About 45-50% of the commercial units are small scales enterprises comprising of self-employed or small partnerships of professionals in the knowledge sector, engaged from project to project with 5 Lakhs or less surplus per annum. After paying a flat 33% on overall surplus, they are further taxed on any investment undertaken in housing, this disincentivizes them from investing in housing as this would reduce the surplus that is needed to invest in the enterprise itself or keep the unit afloat in between periods of slump in demand.

Fig-33-housing.needs&capacity



As per the housing service data of the number of individuals (beds) who request housing they have been able to provide for 25% - 35% with the exception of 2016 and 2018 where they could meet up to 62-63% due to GOI grants allocated for housing. The dependence on GOI grants for housing is a result of the economic policy of contribution along with the hyper risk averse regulations from the FAMC that discourages investment in enterprises or housing. (Fig-33-housing.needs&capacity)

D.6.b- Output of the study based on housing data:

1. Lack of appropriate and adequate housing for AV youth when they reach adulthood
2. Enormous need for developed plots & housing loans for incremental housing; especially for families.
3. Lack of diversity in the housing projects approved and / or supported by the TDC and FAMC

4. Dissonance btw present housing development policy and felt need, creating bottleneck in the delivery of housing.
5. Capacity building for housing project implementation to improve delivery is needed.

D.6.c- Inputs from the focus group respondents on the social infrastructure (health – education – housing) study:

1. Higher education and skill development to increase capability. Values and norms to ensure informed participation in Auroville’s organisation and governance.
2. Improve the organisational structure to ensure reliable and sustainable health care covering primary and elderly health care along with mental health.
3. Evolve strategies for generate investment in housing.

(Fig-027-Focusgr.health.edu.housing)

D.6.d- Summary of the inputs from working groups consultation on housing study*:

Invited Housing Board and Housing Service

Attendees at the consultation- *Xavier, Venkatesh, Rama Narayan (HOUSING BOARD), Ole, Savithri, Siggi (HOUSING SERVICE), Tejaswini (TDC rep) & Suhasini (study coordinator)*

Inputs from the consultation was on the information presented, no additional information of insights emerged

1. How can commercial unit executives decide to invest in housing fund, they are only stewards of their units?
2. Deposits of unutilized funds in AV housing or maintenance fund not attractive as it offers no interest and is deemed as donation.
3. Housing projects need to cater to the physically challenged
4. Housing for senior citizens essential; both independent and assisted

living.

** Unedited feedback is documented in the appendix*

D.6.e- Recommended housing policy- programs- projects:

HOUSING		
Policy	Programs	Projects
1. Adaptive urban planning & design regulations promoting diversity in housing typology and development methodology. 2. Facilitate housing fund creation enabling investment by trusts / units / individuals.	1. Youth housing program for young adults. 2. Mixed use (living & working) incremental housing program for families. 3. Staff housing for Aurovilians by commercial and service units. 4. Hostels & service apartments for volunteers and long-term collaborators	1. Studios and shared houses for youth; entry level. 2. Housing settlements with developed plots (utilities provided) for incremental housing development - families. 3. Trust / unit contribution or investment in on-going housing projects for Aurovilians & newcomers. 4. Independent and assisted living service apartments for senior Aurovilians 5. Hostels & service apartments for Non-Aurovilian collaborators, business partners and contract employees



4. Working groups and activities unable to engage and retain skilled HR in planning, utilities, food production, health, education, housing and economy.
5. No capacity building programs for public governance and administration positions, lack of domain capacity in the nominated members prevents institution building.
6. Policy planning undertaken by nominated working group members, leading to a systemic bias against development for growth in the residents.
7. “Buddy network and licence raj” type of system in place impeding appropriate allocation of resources; capital and human, besides eroding trust in the working groups.

And to address these weaknesses, policies may have to be changed or introduced along with targeted development programs. These development programs should be rolled out with targeted projects to fill the gaps identified to address the needs of the projected population growth of residents and new comers. With the growth in Auroville resident population there will be a proportional increase in the population of the local settlements, employees, volunteers, guests, visitors and tourists who will contribute and benefits of Auroville’s development.

Evidence based forward planning, integrating political (governance & administration) – physical (water – energy – food - environment – mobility – ITC) – social (health – education – housing) aspects is required to predict, plan and guide the development to reach the ideal embodied in the charter. Auroville’s Detail Development Plan (DDP) is then road map with programs and projects accompanied with budgets acting as milestones.

E.1 - Comparative matrix of policy – program and its output

The identified policy – programs – projects for each of the studied sector was evaluated in a comparative matrix of (1) policy – program and (2) program – projects to tabulate the degree of impact on the other sectors. A ranking was given to the degree of positive co-relation on a scale of 1 to 6, with 6 being the most positive impact.

E. Conclusion:

The outcome of the data analysis and consultations with experts and / or Auroville working groups was used to identify the structural issues that impede integrated planning and development:

1. Lack of Integrated data collection and management framework to access comprehensive & accurate information for needed for planning
2. Policy planning procedure is tedious and fragmented because of the present governance and administrative system
3. Lack of alignment in policies and regulations, pushing organisations to functions as silos & be territorial with resources

E.1.a- Comparative matrix evaluating the impact of recommended policies on identified programs in all sectors

POLICY SECTOR WISE	1- ECONOMY PRGM	2- WATER PRGM	3- ENERGY PRGM	4- HEALTH PRGM	5- EDUCATION PRGM	6- HOUSING PRGM	RANKING
ECONOMIC 1- Regulation to set up venture capital fund (unit FD's / external equity) 2- Amendment to Auroville housing & maintenance Policy 3- Amendment to Auroville contribution policy to encourage growth and investment	1- Investment board to manage cross-unit investments 3- Incubation programs for start-ups 5- Succession program				2- Supported management and skill development programs embedded within units	4- Housing program, including service apartments for rental by Newcomers, Aurovilians and long-term collaborators	3
WATER 1- Regulation & standardizing of source, supply and consumption 2- Potable water security with conservation & multi-sourcing 3- Mandatory recycling of sewage with decentralized water recycling to reduce potable water demand 4- Develop resilient water system	2- Provide uninterrupted and efficient water supply networks 3- Water conservation measures combining consumer awareness and pricing slabs.	1- Standardized metering at points of supply & consumption, including irrigation, to enable demands vs sources data collection and management.				4- Plan for recycled water use in toilets by 2025	3
ENERGY 1- Sustainable electrical energy for all 2- E-mobility 3- Energy and Agriculture	1- Efficient distributed and connected energy generation and storage systems with demand monitoring and response		2- Auroville building codes and development plans to include provisions relating to energy conservation and efficiency. 4- Replace existing fossil-fuel mobility with e-mobility; 5- Energy efficiency in irrigated farms			3- Capacity building for energy conservation and efficiency for planners, developers, architects and consumers	3

POLICY SECTOR WISE	1- ECONOMY PRGM	2- WATER PRGM	3- ENERGY PRGM	4- HEALTH PRGM	5- EDUCATION PRGM	6- HOUSING PRGM	RANKING
HEALTH 1- Comprehensive health policy 2- Accessible health care service 3- Financially robust Health fund	2- Primary health care with 9 to 5 for 6 days a week an attendant GP for treatment of injuries, water borne diseases and chronic condition needs 4- Effective & efficient facilitation for secondary / tertiary care			1- Uniform and universal health care data collection and management 3- Increased inputs in geriatric and metal health service as an extension program, including house visits			2
EDUCATION 1- Formal, non-formal and informal education aligned with Auroville's material and spiritual developmental needs. 2- Higher education opportunities for Auroville youth and adults.	1- Program for skill development aligned with anticipated needs of Auroville's service and commercial units 3- Program to support non-formal and informal learning				2- Program for sustained and systematic teachers' professional development irrespective of level of teacher capacity 4- Higher education program in Auroville 5- Partnership program with universities		2
HOUSING 1- Adaptive urban planning & design regulations promoting diversity in housing typology and development methodology. 2- Facilitate housing fund creation enabling investment by trusts / units / individuals.	3- Staff housing for Aurovilians by commercial and service units 4- Hostels & service apartments for volunteers and long-term collaborators				1- Youth housing program for young adults	2- Mixed use (living & working) incremental housing program for families	3

E.1.b- Comparative matrix evaluating the impact of recommended programs on identified projects in all sectors.

PRGM - SECTOR WISE	1- ECONOMY PROJ	2- WATER PROJ	3- ENERGY PROJ	4- HEALTH PROJ	5- EDUCATION PROJ	6- HOUSING PROJ	RANKING
ECONOMY 1- Investment board to manage cross-unit investments 2- Supported management and skill development programs embedded within units 3- Incubation programs for start-ups 4- Housing program, including service apartments for rental by Newcomers, Aurovilians and long-term collaborators 5- Succession program	2- Business parks with rental spaces for offices and assembly	1- Developed land with infrastructure for manufacturing units	1- Developed land with infrastructure for manufacturing units		3- Management and Skill development institute with internships for youth (av, local area & volunteers)	4- Housing projects - studios, hostels, service apartments & houses	5
WATER 1- Standardized metering at points of supply & consumption, including irrigation, to enable demands vs sources data collection and management. 2- Provide uninterrupted and efficient water supply networks 3- Water conservation measures combining consumer awareness and pricing slabs. 4- Plan for recycled water use in toilets by 2025	5- Provide for recycling systems in all existing and new developments and rehabilitation of existing recycling systems.	2- Smart water metering and with web-based interface for data access 3- Land-use plan integrating surface, roof and road run-off rain water capturing in swales and ponds for recharge and direct use. 4- Identification and protection of recharge zones in the land use plan.			1- Mapping of pipeline network for each community /settlement	5- Provide for recycling systems in all existing and new developments and rehabilitation of existing recycling systems.	4

PRGM - SECTOR WISE	1- ECONOMY PROJ	2- WATER PROJ	3- ENERGY PROJ	4- HEALTH PROJ	5- EDUCATION PROJ	6- HOUSING PROJ	RANKING
ENERGY 1- Efficient distributed & connected energy generation, storage systems with demand monitoring & response 2- Auroville building codes & development plans for energy conservation and efficiency. 3- Capacity building of planners, developers, architects and consumers 4- e-mobility 5- Energy efficiency in irrigated farms	2- Sourcing, distribution, repair and recycling of BEE rated appliances, fixtures and consumer durables. 3- Financing facilities for renewable energy generation and storage assets; 4- Financing facility for the procurement of e-vehicles;	5- Migration to precision irrigation with energy efficient pumps with renewable energy generation	1- Planning, development and installation of distributed generation and storage systems with demand response integration.				3
HEALTH 1- Uniform and universal health care data collection and management 2- Primary health care with 9 to 5 for 6 days a week an attendant GP 3- Increased inputs in geriatric and mental health service as an extension program 4- Effective & efficient facilitation for secondary /tertiary care				1- Health data center to anticipate, plan and efficiently provide primary health care 3- Active community support groups during emergencies, epidemics and disasters 4- Counselling service 5- Network with regional secondary / tertiary medical centre for efficient and economic treatments	2- Investment in supported training for Auroville youth in health care (doctors, nursing and paramedics)		3

PRGM - SECTOR WISE	1- ECONOMY PROJ	2- WATER PROJ	3- ENERGY PROJ	4- HEALTH PROJ	5- EDUCATION PROJ	6- HOUSING PROJ	RANKING
EDUCATION 1- Skill development aligned with anticipated needs of AV's service & commercial units 2- Sustained & systematic teachers' professional development 3- Support non-formal and informal learning 4- Higher education program in Auroville 5- Partnership program with universities	1- Comprehensive mapping of skill requirements, both current and anticipated & setting up of an institutional structure for skill development				2- Framework for teacher PRO development unique to AV's needs & institutional structure for teacher PRO development 3- Higher education program using existing facilities & people with educ & career counselling center 4- University partnerships in learning credits, student exchange and research. 5- Coordination center for applied research & training centers		2
HOUSING 1- Youth housing program for young adults 2- Mixed use (living & working) incremental housing program for families 3- Staff housing for Aurovilians by commercial and service units 4- Hostels & service apartments for volunteers and long-term collaborators	1- Studios and shared houses for youth; entry level. 3- Trust / unit contribution or investment in on-going housing projects for Aurovilians & newcomers. 5- Hostels & service apartments for Non-Aurovilian collaborators, business partners and contract employees			4- Independent and assisted living service apartments for senior Aurovilians		2- Housing settlements with developed plots (utilities provided) for incremental housing development -families	3

E.4- Road map for preparation of Auroville Detail Development Plan.

The Auroville Master Plan - perspective 2025, was approved by the Ministry of Human - Resource Development - GOI (letter No.F.27-3/2000-UU-dated – 12th April 2001) followed in 2004- Auroville Universal Township – Master Plan 2004 – Directions for Growth. Since 2007, planning groups composed of architects, communicators and community representative have appointed consultants to prepare “detail plans” for the residential, industrial and international zone. All most all of them have been unimplemented as the projects that are proposed and implemented by individuals, groups and working groups tend to diverge from these detail plans.

While it is essential that the Auroville Town Development Council undertakes the preparation of a “Detail Development Plan” but the implementation of this plan is possible only if there are unified policies to guide and coordinate the programs and projects.

This study is the first step towards demonstrating the need for a unified policy planning body to ensure convergence between the polices of the various working groups to enable the Auroville Town Development Council – L’Avenir d’Auroville with competent urban planning consultants undertake the preparation of the “Auroville Detail Development Plan” that elaborate these polices with supporting development programs and projects including annual budgeting.

FLOW CHART - URBAN PLANNING AND DEVELOPMENT WORKS AUROVILLE



F- Appendix

F.1- Study and consultation timeline

1. Study aim, scope, output and framework prepared and submitted by Suhasini to TDC – 29th Jan 2018
2. MOU signed btw TDC and lead investigator (Suhasini) – 21st march 2019
3. Data collection & analysis by Suhasini, Harini, Manas, Vikram and Martin. S – April to Dec 2019
4. Focus group of experts and persons with experiential knowledge in economy, water, energy, health, education and housing on the 11th Jan 2020
5. Sector – subject wise consultation*
 - Education** – SAIIR BOARD – 03rd Oct 2020
 - Housing** – Housing board + Housing service – 06th Oct 2020
 - Energy** – AVES, Auroville Consulting and Sunlit future – 23rd Oct'20
 - Economy** – FAMC, BCC, ABC, ABS and some individuals – 28th Oct'20
 - Health** – Health Center, Sante, Ambulance team, health fund, health & healing trust, Covid task force, Matram team – 04th Dec'20
 - Water** – Water group, Av water service and some individuals – 17th Dec'20
 - Planning** - Avenir / TDC – 24th Feb'21
 - AV Council** – BCC, FAMC, WC, Housing board & Service and TDC – 23rd March'21
6. Presentation (PPT) integrating the inputs of the consultation to RA– (proposed date 26 Feb 2021)
7. Report release to TDC & Aurnet– (proposed date - 29 March 2021)

** (No consultation btw Feb – Sept 2020 due to Covid-19 & TDC internal organisational issues)*

After each consultation meeting the presentation was shared to the working group for their inputs / comments were invited over email and a period 3 weeks was given. Below are the un-edited inputs / comments, sometimes with the names of the individuals mentioned to ensure complete transparency.

F.2- Focus group consultation report

Focus Group Session - 11-01-2020 - feedback - Toine

Energy

1. Electrical energy consumption must include also energy consumed from solar energy systems to get a more accurate number for the per capita energy consumption. This may have to be done on computation basis if there are no metered solar energy data.
2. Electrical energy sourcing data as of today (wind, solar, others) may be included as this will help define energy generation strategies and priorities.
3. Non-electrical energy consumption and generation numbers are also needed.
4. Energy used for water pumping may be divided into four categories:
 - (a) Pumping water to the surface from wells;
 - (b) Pumping water into overhead storage tanks;
 - (c) Pumping of water for distribution and recycling;
 - (d) Pumping water for farm irrigation.

If for each category the energy (kWh) per litre numbers are available, it will help in defining a more sustainable energy sourcing, storing and distribution strategy. In the absence of this break-up, energy used for distribution in a low-density area (long pipe lengths) for example could distort the overall water-related energy usage. The break-up will also help to find low-hanging fruits where energy conservation can be applied on a priority basis. This data can be collected only if there are separate energy meters for the borewell and booster pumps.

Food

1. The financial numbers that were given for the food sector do not give a clear picture of food consumption.
2. We may define 2 – 3 typical food consumption patterns and derive from there the actual food items consumed (rice, grains, vegetables, fruits, oil, milk, eggs

etc). This will be an estimate.

3. Obtain food *production data* (existing and the potential of existing farms to start with).
4. Make a development plan and set development priorities in the agricultural sector based on the data in (2) and (3) above and the population growth and mix projections.

Economy

1. In addition to numbers relating to maintenances and NVAs, the engagement levels of Auroville residents would give a clearer picture of how and where our residents contribute to the collective economy.

Data relating to maintenance or on persons who are self-supporting does not say much about the contributions that people under these categories make to Auroville. In conventional economy terms this would be referred as “productivity”. In the context of Auroville it may be more appropriate to refer to this as “engagement” or “involvement”.

2. There may be people who are “self-supporting” but who do not contribute much to the collective realisation of Auroville just as there could be persons who are “self-supporting” and give all their time and energy to Auroville. The same applies to persons who are not “self-supporting”. The maintenance status does not say much about the actual engagement and contribution. Hence the need of an *engagement* survey. This may take the form of an on-line survey and will give us a much deeper insight in the economy (and more) of Auroville.

Session process feedback

1. The data collection would have taken months and I salute the persons who have done this work.
2. The table exercise on defining priorities was rushed. More time was needed to go deeper into the exercise of priority setting, for example to explore relationships between priorities and to arrive at priorities in the context of (1) the ideals of Auroville; (2) the long term environmental and socio-economic impact of each identified priority. There was insufficient space for mutual clarifications or context setting.
3. Priorities may be set on the basis of a combination of two types of inputs:

- (a) Past data and trends and future projections derived there from;
- (b) A development vision for each segment / sector of development area resulting in plans, priorities and projects that manifest that vision.
4. It was interesting to see that in the category Energy, Water and Food the sticky note with a proposal for an in-kind budget for each of these three development areas got a good number of round stickers. This indicates that participants find it important to have energy, water and food source and application budgets that help in determining more specific development priorities. An energy budget for example that sets targets for both the supply side (energy mix and quantity) and demand side (energy consumption per capita) and that is driven by a vision for a 100% renewable energy future would precede, and in fact determine, the more specific development priorities.
5. In a follow-up session it would be good to do a deeper dive into the priority setting exercise whereby links are made with a development vision for each development area and between the various development areas.

TvM 11JAN2

F.3- Saiier – Education group consultation report

Received by email from Chali on 10.10.2020

Dear Suhasini,

Below are the draft notes that I have circulated to the rest of the Board. Some people have given some input on the table you sent but no one has yet added anything to these notes.

Hope they are helpful.

Thanks.

Best, Chali

153.2 Invited L'avenir d'Auroville reg presentation on development plan at 10 am (see attached email from TDC)

Suhasini, Tejaswini and Sreevatsa joined the meeting to present the outcome, regarding education, of the participatory planning session that took place in January and to ask for the Board's input.

Some observations:

- Before suggesting limitation of capital development/buildings for schools, the specific approach to education needs to be considered.
- SAIER is already addressing the listed projects in the table shown, but it is helpful to put them in the perspective of the wider policies and programs that are presented.
- Growth of programs and projects depends on human resources so focus is needed on how to support that growth in a steady, healthy and balanced way.
- The floating population of Auroville (volunteers, guests, students, consultants, etc) needs to be considered.
- It is helpful to identify priorities without excluding other projects and needs that weren't planned for or foreseen ahead of time.
- It is important to maintain the 'organic' aspect and higher dimension of Auroville's aims and life.
- Consider more attention and 'investment' to Outreach activities (according to the table prepared using data from Harini about growth according to funding allocated).
- Might be useful to identify what would be needed from other sectors that would support development in education.

Outcome: Suhasini will send the table related to education outlining suggested policies, programs and projects. The Board is requested to send its input to the TDC team by the 17th of October. Comments and suggestions from members will be collected via email.

I am not inclined to do this exercise in an email conversation. It would be more productive if it can be done in a meeting with a reflection on

1) how the education sector as whole can contribute its input to the planning of Auroville (not just an occasional feedback by the Saiier Board)

2) to do an exercise by the board on how the Saiier five year plan is the result of policy and translates into programs and projects. The reflections we are invited to do in relation to the development priorities is meaningful if it is done in a specific context and in reference to the Saiier priorities.

I agree in principle that focussing on Human Resources and skill is a top priority, even higher than physical development and infrastructure, but this exercise in the end has to translate into priorities for GOI grant. It may very well be a choice to reduce or not to

EDUCATION AS PRESENTED TO SAIIER BOARD ON 03.10.20 BY TDC & CONSULTANT – inputs in red from Sanjeev Agrawal		
Policy	Programs	Projects
A- Formal and non-formal education aligned with Auroville’s developmental needs	1- Education program for skill development. This program cannot be an exclusive skill development program.No one is asking for it. 2- programs for teachers training – these programs take place as and when resource persons are available. It is a continuous need and not a development priority 3- development of educational materials Am unaware that this is a real need at this moment— there are far too many materials available already-not enough time to use them .	1- Skill development institutes with internships and placement service. A big question mark here 2- Institute for teacher training Not necessary- SAIIER takes it up as and when necessary 3- Educational material &???? 4- Outreach for capital generation in education sector?????
B- Tertiary education (post schooling)	- Skill development i1- Academic programs partnerships with universities (internship / exchange programs)	1 - set up and support applied research and training centres in Av— Does the small no. of students justify this??? 2 - education and career counselling centre- A special centre is not needed-but SAIIER needs to take this up 3- Collegiate composed of small-group tuition with a tutor/supervisor for UG and PG levels. Already formulated and offered by SAIIER/Last school /Future School

develop any more constructions and concentrate the capital grant allocation on equipment but it should be a conscious and meditated choice. Reduction in capital grant for infrastructure would involve a corresponding reduction in the general budget that allows us to support our human resource. Unfortunately due to our dependence from GOI grants we are trapped in a system that gives priority to physical development and human resource development is a subsidiary aspect.

The exercise to translate the development program of Saiier into program and priorities is important also in the view of the recent episode a few months back when the building application of Last School was refused because it did not match the development priorities and Saiier had to give an explanation how its choices were made. As far as I know that conversation was never concluded, but it is an important case study who in the end determines the priorities for program and projects in the education sector thanks

Sauro

Dear all,

I don't know what to do of the table sent by Suhasini. What is its use?
 Is it to become the document of reference to prioritize allocations of resources by diverse groups?
 Is it just a practical reminder of things to be done eventually?
 If some priority emerges in the future, which is not mentioned in this table, what will be its status and legitimacy?

I don't think I have the competence required to amend usefully this document.

All the best

jeanyves

Dear all,

reading the replies of board members, I needed to sort out our responses and tried to summarize where we stand in reference to the request:

Education being a crucial factor in all societies and their development - and even more so in Auroville, the SAIIER board has been asked to give input in the field of education. To this end we were presented the background of the TDC study and the data collected on several essential development sectors in Auroville, and were briefed on the development priorities that have emerged from their joint analysis. As was pointed out, in the focus group meeting with representatives from all

sectors in Jan. 2020, Jean-Yves, Jyoti and I participated, and our contributions are reflected in the document that we are now asked to comment upon. I believe that we should continue to participate and contribute constructively.

While Sauro suggests that, beyond SAIER, the “education sector as a whole” should be consulted, Manas as a SAIER board member has taken the trouble to list several projects which either would generate the required insights into educational sector needs or which detail programs and projects that have already been initiated, are being supported already, or are under development and discussion by us. I understand that this is what the TDC is expecting as contributions towards a detailed development plan. - The final outcome of the TDC study i.e. a detailed development plan, is meant to help and allow Auroville to coordinate and collaborate in efforts of development across all sectors. While the aim of the study is to identify main priorities and directions, SAIER is free to diversify or take on other programs besides those that emerge from the priorities of the TDC study. Sauro points out that we seem to operate in a trap. SAIER has been created to operate as a channel for GoI grants. In our board meetings we have stated many times that ideally this should not be the definition of SAIER’s role yet we habitually withdraw into the shell of this definition, with its limitations of funding purposes (and occasionally with some mistaken assumptions in regard to possible funding purposes). - Sauro acknowledges “that focussing on human resources and skill is a top priority, even higher than physical development and infrastructure”, a priority which is the result of the data collection and analysis by the TDC team to which the brainstorming meeting in January 2020 has contributed. Sauro also points out that our priorities might be different from what policies for GoI grants are ready to support; and that newly defined priorities (and thus programs & projects) might not fall within the range of GoI grant policies. This might be or might not be the case, but it should not prevent us from exploring and identifying educational priorities in the context of our society’s development. We have been doing this occasionally, and Sanjeev’s initiative with Last School and Future School for a program in higher education is in this direction; the same is true for Valentine’s Disha info desk aiming at guiding youth in their after-school options and opportunities within and outside of Auroville. In our annual procedure of assessing project proposals for research & activities, we do the exercise of sorting out in which instance we respond to random individual initiatives - and we refer individuals to a larger context and similar initiatives in their field of action; in which instance we regard the project as not supportable by GoI grants; and in which instance we recognize the efforts to make a project fit into GoI grant policies etc. (And in our assessment of publication projects, when we encounter claims by authors on the aptitude of the intended publication for its use in schools, we aim at evaluating the publication in this reference and occasionally ask for a test run in schools.) – It took me as a board member several years to understand these differences, as there was little clarifying communication in these matters, and I know that other board members too have been struggling with understanding the policy rationale behind our decision-making. I personally

find it essential and very helpful for the board to explore and define programs and projects with some understanding of the development priorities of our society. Jean-Yves in his feedback is honest enough to admit that he does not feel sufficiently competent. If all board members feel this way, we shall need to find people who are more competent than we are and can educate us towards some basic and enabling competency. As regards detailed suggestions: Sanjeev comments on “program 2 - programs for teachers training” that these are “a continuous need and not a development priority.” In my understanding, such programs must be developed because teacher training (i.e. development of age-appropriate teaching methodology and skills on the basis of Sri Aurobindo’s and the Mother’s statements on education) has been identified as a continuous need. We (the board) get proposals for teacher training every year, and we approach them with lots of skepticism - possibly because we do not have a consistent program towards this purpose. As regards program “3 - development of educational materials”, Sanjeev comments, “am unaware that this is a real need at this moment; there are far too many materials available already - not enough time to use them”, and I am also

EDUCATION AS PRESENTED TO SAIER BOARD ON 03.10.20 BY TDC & CONSULTANT – INPUTS FROM MANAS		
Policy	Programs	Projects
A- Formal and non-formal education aligned with Auroville’s developmental needs	1- Education program for skill development 2- programs for teachers training 3- development of educational materials	1- Skill development institutes with internships and placement service 2- Institute for teacher training 3- Educational material & 4- Outreach for capital generation in education sector
B- Tertiary education (post schooling)	1- Academic programs partnerships with universities (internship / exchange programs)	1 - set up and support applied research and training centres in Av 2 - education and career counselling centre 3- Collegiate composed of small-group tuition with a tutor/supervisor for UG and PG levels

curious to understand the background of the statement in the table of the TDC document. (In my understanding, teachers and students at Future School who prepare for IGCSE exams are unlikely to articulate such a need.) As regards all other detailed suggestions made by Manas, I am very much in agreement. I am also in agreement with his fresh definitions of three policy categories and separating “revenue generation (for education & research)” from the other two policy categories. (I am not sure to which extent Manas is aware of the efforts of the Teachers training & resource centre, as it is not mentioned in his comments, while in other contexts he refers to existing initiatives.) Thanks for your patience reading through this long note.
Regards, Lucas

F.4- Housing board and service consultation report

----- Forwarded Message -----

Subject:	policy-program-projects
Date:	Wed, 21 Oct 2020 03:02:53 +0000 (UTC)
From:	Venkatesh Auroville <venkateshauroville@yahoo.co.in>
Reply-To:	Venkatesh Auroville <venkateshauroville@yahoo.co.in>
To:	Suhasini Ayer <suhasini@auroville.org.in>
CC:	Housing Service <housing@auroville.org.in>, Housing Board >> <housingboard@auroville.org.in>

Dear Suhasini Ayer,

Policy:-

- 1, How is it possible for a trust to invest money in housing projects, they are just over-seeing the functions and accounts of Units and activities?
- 2, Units and Individuals putting money for their future housing in a housing deposit account, but they don't get any interest on it, because Auroville rule is any money deposited is treated as a donation, so people afraid to deposit the money in Auroville instead they keep the money in the bank itself. If there is any flexibility in the rule, Individuals and units surely deposit their money in the Auroville Maintenance account and Auroville can use it as fluid money.

Projects:- In projects, we have to include apartments mainly meant for Physically handicapped people.

Programs:- Houses specially meant for old age people let's say from 60 onwards.

Thanks!

K> Venkatesh.

----- Forwarded Message -----

Subject:	HS feedback on Housing Development Priorities
Date:	Fri, 23 Oct 2020 12:13:44 +0530
From:	housing . <housing@auroville.org.in>
To:	Suhasini <suhasini@designconsult-av.com>
CC:	Housing board >> <housingboard@auroville.org.in>, Sreevatsa L'Avenir <sreevatsa-avenir@auroville.org.in>

Dear Suhasini,

After requesting the entire Housing Service team to review the document with the Housing Development Priorities, I can now confirm that all apart from Vekatesh (who has already provided his individual feedback) fully agree with the Housing priorities presented to us and don't have any additional points to add. We sincerely hope that the proposed new policies will be approved and put into practice soon.

Sorry for the delay in providing this feedback!

Thanks and best regards,

Ole --

On Behalf of the Auroville Housing Service Team

(Alexey, Aravindh, Meena, Ole, Savithri, Sigg, Sundar, Venkatesh)

Phone: (0413) 2622658

housing@auroville.org.in

Public Hours: Tuesday to Friday 9:30-12:30, Monday 10:00-12:30

On appointment: Monday to Friday 2:30-4:30

Saturday: accounting only, 10:30-12.30

F.5- Energy groups consultation report.

----- Forwarded Message -----

Subject:	Follow up on the “energy” consultation - 23.10.20
Date:	Sat, 24 Oct 2020 18:20:33 +0530
From:	Toine van Megen Auroville <tvm@auroville.org.in>
Reply-To:	tvm@auroville.org.in
To:	‘Suhasini’ <suhasini@designconsult-av.com>
CC:	‘ponnuswamy’ <ponnusamy@auroville.org.in>, ‘Rishi’ <rishi@auroville.org.in>, ‘Martin Scherfler’ <martin@aurovilleconsulting.com>, ‘Prasannaram Ilangovan’ <aves-engineer@auroville.org.in>, ‘Tejaswini.’ <Tejaswini@auroville.org.in>, ‘Sreevatsa L’Avenir.’ <sreevatsa-avenir@auroville.org.in>, ‘Manikandan’ <vengatmani@gmail.com>

Dear Suhasini,

There is indeed no double “t” in the word “priorities” in slide 2. Perhaps it looked like that from my viewing angle or perhaps I have to go for an eye check-up.

Slides 10, 14-15 : Per capita electrical energy consumption

The electrical energy growth has been extrapolated to 2028 in four categories (residential, pumps, education, and commercial). See slide 10. It is not clear whether “pumps” includes agricultural pumps. A better categorisation would be: Residential, Institutional (offices, schools, libraries, collective kitchens and other services), Commercial & Industrial, Agricultural, Municipal Services (e.g. street lights).

The per capita energy consumption growth is shown in slide 14-15. It grows to 4,902 kWh per capita by 2028 (4,167 kWh if certain policies are implemented).

Has this been done by dividing for each year the expected energy consumption by the expected population or by simply adding a growth percentage directly to the per capita number?

The former method would be the right method but even with this there is the following issue: per capital energy consumption will flatten out after a certain saturation number has been reached. You could call this a “lifestyle” ceiling combined with an industrialisation ceiling. I would therefore introduce a reducing growth factor or set a ceiling in absolute numbers and make 2 – 3 scenarios with different degrees of e-mobility growth (which will *increase* per capita electrical energy consumption and *decrease* per capita fossil fuel energy consumption to the extent that electrical energy used for e-mobility is generated from renewable energy sources).

The note on the right-bottom of slide 14-15 says “Needs: Policy for energy generation

and efficiency; Increased supply & extended transmission network”.

I would change this to: “This needs policies for: (1) Distributed renewable energy generation; (2) Energy conservation and efficiency interventions; (3) Auroville electricity distribution network expansion and strengthening”.

Slide 17

I recommend minor (but important) edits in the first line: “1. Plan and implement distributed and connected systems for energy (on-site renewable and hybrid), water (multi sourcing and interconnected storage) and food (locally produced, collectively consumed)”.

Best regards,

Toine

D.1.C- ENERGY - Toine with inputs from the group that was consulted		
Policy	Programs	Projects
A- Integrated energy generation and consumption policy	1 - Provide uninterrupted & quality power supply to all its residents, services and units. 2 - Consumer awareness programs 3 - Capacity building in energy efficiency with training & sensitization for architects, builders and project holders	1 - Energy plan for distributed generation and storage with demand response integration. 2 - Sourcing, distribution, repair and recycling of BEE rated appliances, fixtures and consumer durables
B- Maximize local energy generation through distributed renewable energy technologies	1 - Auroville Sustainable Energy Fund 2 - Demand response program	1 - Grid-connected solar PV systems 2 - Biomass energy – hydroponics project linking farms, kitchens & restaurants 3 - Micro-wind projects on rooftops 4 - Introduce distribution transformer and behind-the-meter level energy storage

F.6- Economy groups consultation report.

Development priorities Feedback (November 5th, 2020): nity

Ulrich Blass, Frater-

Facilitate investment for promising start-ups and existing units:

At present the only options to access financing for both start-ups and existing units is via donations (rarely), loans from executives (no interest) or external loans (Unity Fund, Loan Fund) which usually carry a heavy interest rate. Financing via equity participation is presently not supported.

Add to this the costs of GST, PF, ESI compliance etc. which small external entities usually do not have to comply with (GST exemptions, SSI units with labour law exemptions etc.) and the Auroville entity is at a big competitive disadvantage.

What is needed is a new structure which allows equity participation from external parties as well as Auroville units and individual Aurovilians and which provides the benefit of equity participation without selling short Auroville's ideals. Difficult, but not impossible. (Divya K. has circulated some thoughts on this topic recently)

Note: Some well established units sit on large amounts of Fixed Deposits which earn less and less interest. Some of that money could be assigned to a venture capital (Auroville style) pool. The contributor would have to have some benefit from this contribution, i.e. a win-win for both parties.

Equally, more **Business Park setups, such as Aurelec, Saracon, Auro-Bakhti** are badly required. These spaces should be made available against a rent contribution and should not require full payment, as is the case with UTSAV, Mona's project near Verite.

TDC should identify suitable areas in various locations. Providing office space in the residential zone area should also be positively considered but in the form of an independent complex and not as a part of a residential complex such as Kalpana. Locating office space too far away from the Residential Zone is not ideal as it increases circulation.

Incubation programs for start-ups.

The administrative procedures and complexities related to setting up a unit or making changes to the setup of an existing unit are very complex and somewhat de-motivating. To address this problem the so-called "Activity" entity was created. It was meant to be simple. However due to very limited oversight of the registration process the creation of new activities mushroomed dramatically. The response was a tight set of rules to be included in the CoC in order to regulate this type of entity.

What is badly needed is a "Sandbox" type of environment with minimal administrative requirements, where ideas can be tried out and once validated, the required administrative process can be initiated to convert to a functional unit.

Activity vers. Subunit.

Units which function as an umbrella entity for activities and which have over 60 entities crowding under their umbrella can neither oversee nor guide the activity manager.

As an alternative and borrowing from the mentor concept, existing units should be allowed to create subunits under their mentor ship, guidance and full responsibility. This was an option in the past (Auroville Online Store was created that way) but has been abandoned as an option as per the present CoC.

Succession Planning:

Most unit executives show little or no interest in succession planning, except in the case of children expected to take over the unit. One important reason relates to the likely reduction of financial support after retirement. While being a unit executive the amount of maintenance - within certain limits - is for the executive to decide. Once retired the only assured maintenance is a basic maintenance, which very rarely would allow the retired executive to continue covering his expenditures as was possible for him while being an executive. Hence retirement is delayed as long as possible.

A possibility for consideration: On retirement the executive would be entitled to receive a maintenance of up to 75 % of the net maintenance received from the unit provided it had been channelled via CS during the past two years before retirement.

Financial Data:

It would be helpful to know the total number of persons a unit employs together with a breakup of the number of employees with a pay package equal or exceeding a regular maintenance. This would be helpful to determine the **theoretical** maximum number of Aurovilians a unit could carry.

Energy:

The electrical master plan together with the AVC Smart Grid project is covering development priorities to a large extent. Add to this the rapid increase in distributed roof top solar and Auroville can rightfully claim to make good progress towards sustainable energy management.

Water:

At present there are too many competing groups existing related to water planning, distribution and management. A unified approach with a focus on a comprehensive water master plan is urgently needed. Due to the absence of such a plan GOI funding is not accessible or is very limited and developments take place in a haphazard manner.

Hostels & service apartments for Non-Aurovillian collaborators, business partners and contract employees:

One important category in above list is missing: Assisted living service apartments for parents of Aurovilians. Too often Aurovilians need to leave Auroville in order to look after ailing parents, who would be ready to move to Auroville provided a space could be made available. Mona actually had submitted a project along those lines. This could be located outside the master plan area and could even generate some income

----- Forwarded Message -----

Sub-ject:	Re: Economy sector - notes for invited inputs and feedback
Date:	Wed, 25 Nov 2020 16:42:05 +0530
From:	Suryamayi Aswini <suryamayi@auroville.org.in>
To:	Suhasini Ayer <suhasini@auroville.org.in>

Dear Suhasini,

Thank you for having responded to my questions. Below is my personal feedback. Regarding BCC's feedback, it is on this agenda for this week's meeting to discuss. I hope we can send it through next week.

Warmly,

Suryamayi.

Regarding Policy (1) – Facilitate investment for promising start-ups and existing units:

I would support programme (2) *Support Programs* over programme (1) *Incubation programs for start-ups* at this stage. To my (limited) knowledge incubation programmes for start-ups have been tried and have not yielded strong results. Support programs have been tried and yielded strong results (i.e. sending Jane of Mason & Co to management school). The former is also riskier than the latter in economic terms. Existing units also have demonstrated long-term commitment from executives.

I would **strongly support** Project (1) *Investment board/group to manage cross-unit investments*. I don't know many examples of units with significant financial capital investing in the growth, R&D of other units – even within the same trust or sector. This is an untapped resource, and seems an obvious practice for a communal economy such as Auroville. Additionally, the investment board/group could advise on other funding sources, notably CSR funding, which seems to be a low-hanging fruit that poses no complication as a funding source in Auroville's unique legal-economic context.

I have no feedback on 2, and I support (3) *evaluating/monitoring business plans*.

Regarding (4) *Amendment to Auroville Contribution Policy to encourage growth and investment*, I have **considerable reservations**. The current contribution policy (minimum of 33% of profits) leaves a significant amount – 66% of profits – that can be used for growth and investment. I think this is already high, and furthermore, not all sectors require such an amount for re-investing in their own growth and investment (consultants, for example, who require little capital for equipment, for example). I think the contribution policy needs to be revisited to be higher for sectors that do not require funds for capital investment or R&D, especially if, as at present, this profit is not being used for

cross-unit investment to further develop the Auroville economy.

Regarding Policy (2) – Facilitate the attraction and retention of skilled human resources:

I do not feel any resonance with program (1) *Program to attract skilled people to Auroville*.

I **strongly support** program (2) *Housing program*, and any changes to the Housing Policy (Project 2) required to carry this out.

Regarding program (3) *Benefits program, including health, education, leisure, goods and services*, much of this is already provided through centrally supported budgets. I think this is important to retain the communal character of Auroville. I would rather see increased funding to make key services fully supported by budgets rather than allocating 'benefits' on an individual 'Maintenance' level basis (Project 3).

I do support the *Individual growth and succession program* (4). I think it is important that – young people especially – are provided with funding/opportunities to develop their skill sets **outside of the Auroville context** if needed. I would therefore support Project (4) *Management training for Executives*. Regarding (1) *Skill training and internships for youth, Newcomers and Volunteers*, this has been attempted in a more formalised way in several iterations with little success. It seems we simply do not have the carrying capacity to do so at present, as it requires a lot of time and resources from existing units/centres. Perhaps the ad-hoc one-on-one internships is the way to continue for now.

“By our stumbling the world is perfected” ~ Sri Aurobindo

Suryamayi | Gaia, Auroville | +91 9489457158

Dear Suhasini,

I truly appreciate you applying yourself to defining development priorities, to inform broad **policies** supported by the widest degree of shared participants (groups, individuals, etc).

I did not find the presentation easy to understand - there were only a few valuable 'takeaways' outside of the basis that the process is warranted, and you have compiled input through focused meetings with many good people, and data collection.

That much could be understood. Yes, the laser pointer could have helped to follow talking points, but actually even then the information layout was not succinct or visually focused enough.

I could offer feedback on many aspects of it, but simply put it isn't ultra accessible in its current form. That isn't so good, because of effort, aims, etc. It's not about 'accuracy of the data' rather the way it is compiled.

There is a statistician named Fred who did an excellent job with a ton of random data for a recent survey I was part of. I highly recommend him because he could help make the information accessible. Intuitive and technical talent.

Designing parameters for display of the data it could then also be possible to have versions - one raw, one for technical advisors, one for heads of diverse departments, one for informed laypersons, one for people with very little understanding.

Maybe you see what I mean :-)

Suryamayi made a comment along these lines, us as 'dept. heads' would tell others "We listened to a talk about meetings and data, which informed an outline of sorts and some statistical trends". Better would be something overly simplified, using the data as a supporting reference only.

Otherwise the meeting was nice, thanks again for organizing it.

love,

Isha

ps: And yes, some kind of Basic Income system would change the overall economic situation a lot.

Dear Suryamayi,

Thanks for sharing. I'm trying to give my feedback but feels that some background information is missing for me.

I'm missing the AV monetary policy in order to decide on investment priorities.

Are we going to **Expansionary policy**? Is there any policy about the reserves AV should keep?

Now the interest rate on monetary investments are high which leads to hold high reserves for the benefit of the interest income. How can we challenge that with alternative sources of income?

Anyway, my priorities for investments would be:

Human resources - most important resource for the development of AV. For that we need to invest in trainings and management support (2.1.1; 2.1.4 in the feedback table)

Physical infrastructure - Energy, roads, water, communication and more. This will improve our economic growth and seems very much needed (Can't find this type of policy in the doc).

These investments also contribute to reducing unemployment.

Maintenance policy should be reviewed in any case after so many years.

With Contribution policy I would wait due to the economic situation which makes the difficulty to predict

Peace

Danny www.wellpaper.org

F.7- Health groups consultation report.

----- Forwarded Message -----

Subject:	yesterday's meeting on health
Date:	Sat, 5 Dec 2020 09:30:37 +0530
From:	Dan <dan@auroville.org.in>
To:	Tejaswini M <tejaswini-avenir@auroville.org.in>, Suhasini Ayer <suhasini@auroville.org.in>

----- Forwarded Message -----

Subject:	Fwd: re:Development Priorities Feedback
Date:	Wed, 9 Dec 2020 09:19:39 +0530
From:	Suryamayi Aswini <suryamayi@auroville.org.in>
To:	Suhasini Ayer <suhasini@auroville.org.in>
CC:	Danny Merguei <danny@auroville.org.in>

Dear Suhasini,

See below feedback from one other BCC member (Danny Merguei, in cc) on the Development Priorities presentation.

Warmly,

Suryamayi.

"By our stumbling the world is perfected" ~ Sri Aurobindo

Suryamayi | Gaia, Auroville | +91 9489457158

----- Forwarded message -----

From: **Danny Merguei** <danny@auroville.org.in>

Date: Mon, Dec 7, 2020 at 5:22 AM

Subject: Re: Team meeting or Subgroup re:Development Priorities Feedback

To: BCC OFFICE <bccoffice@auroville.org.in>

Cc: BCC AV <bcc@auroville.org.in>

CC:	Sreevatsa L'Avenir <sreevatsa-avenir@auroville.org.in>, Sumeet .Kumar <sumeet@auroville.org.in>
------------	---

Good Morning Suhasini and Tejaswini,

I would like to thank you for your initiative to tackle the topic of 'Health' as one of the mains topics for the further development of Auroville.

I convey to you my willingness to help and to be part of a possible next team of reflection/action on the topic.

Like you, I am convinced that it doesn't make sense to reflect on 'economy', 'energy', 'governance' and other big topics if the population of our city is physically and/or mentally unhealthy since both are intimately linked and connected. In fact, mental issues lead frequently to physical disorders.

On top of what has been shared yesterday, which represent a solid base for further reflection and work, I would like to inform or remind you of some initiatives that are already in the pipeline in Auroville, and that could be of interest to the overall discussion on the topic:

* The discussions about a 'Social Hub' are still pending'. Such a structure would cover all the activities and purposes related to health & wellbeing. All the activities/groups linked to the topic, have already participated, by near or by far, in these discussions. This 'Social Hub' would represent a big step to harmonize and invite for collaboration all the actors of the field. Since the topic has been carried so far by the Council, the group waits for the next steps to be proposed

* In Santé, we have a protocol called PCC (Patient Care Conference), which aims to tackle diseases from a holistic perspective, following Mother's teachings, associating several different practices to treat a specific patient in a way that could help others and de-activate the increase of further cases. Also, we conducted a few months of training about diabetes B., we held an 8-week training about balance for the elders (from both a physiotherapist and mental perspective), we are initiating research about how to treat auto-immune diseases from both Ayurvedic/diet and mental perspectives, etc.

* The seniors and their possible specific issues age-related, are since 6 months, tackled by the 'Third-age group' (coordinated by Mattram)

* There is also a group that is conducting discussions on the topic of death, in Auroville

All the above initiatives, not to mention all those that are not publically acknowledged, witness the willingness of many Aurovilians to contribute to the wellbeing of all. However, they may appear as too much disseminated and isolated, leading to too much energy/time spent without concrete outcomes, and they would necessarily deserve more attention, coordination, and common strategy.

@ Suhasini, finally, I would like to come back on what you shared about the Vaccination topic in Auroville, which could, according to you, be strongly coming up in the next months, and that could eventually split the community. Like many of us, I regularly follow the international news, and the topic of vaccination against the Covid is part of the discussions I have here and there with friends. Not to mention all the statements that are shared on AuroNet, on the subject. Basically, it appears that the fact to be Aurovillian doesn't necessarily lead to promote one side or the other (for or against the vaccination). Foreseeing the debate before being forced to abide some rules from the GOI could probably help to de-activate tensions in our community.

I thank you for your consideration and wish you a happy weekend.

Tell me if and how I could be of help.

CC to Sreevatsa and Sumeet.

Dan

----- Forwarded Message -----

Subject:	Re: Health Sector - Policies - Programs - Projects inputs for development priorities
Date:	Mon, 7 Dec 2020 15:31:20 +0530
From:	pauli <pauli@auroville.org.in>
To:	Suhasini Ayer <suhasini@auroville.org.in>

Dear Suhasini,

I totally agree with you that a more universal data collection system needs to be put in place to better read and understand the collected data.

Why the AVHC has an average of 8 AV and Sante in comparison has 30 AV per day visiting is due to the fact that all 8 AV visiting AVHC see a GP, but out of 30 AV visiting Sante, most probably only 2 or 3 see a GP, all other 28 or 27 AV come for other treatments which are offered by Sante (shiatsu, Ayurveda, physio, Reiki...etc) which do not involve a GP, but the data appears as if sante is covering far more patients than AVHC. This might be misleading in the long run.

I believe the Entry Service or Entry Board should get involved in this exercise as well. Since more than 1 year I keep informing them that the age group of joining New Comer has drastically changed.

And that this might create an imbalance in our health care system in the future.

As I am with Mechtild organising the Homecare and senior care...we are worried when we see NC of age 75, and the latest being 79 years old!!

We hardly have enough caregivers and housing for AV who spent 50 years plus in Av, how will we be able to welcome AV into our senior care system who have joined 2 years ago and now need permanent care and housing? The financial situation of them is often the least problem, especially if they are of foreign origins, but the Human Resource's to look after their needs are missing.

Mahalakshmi Home has 1 space left and Marika senior Home as well. I think it's clear that capacities are stretched. Adding more far advanced seniors to the whole system isn't a great idea.

The Health Fund will be organised and handled by Stefan (evergreen) and Meenal as I am full time with AVHS senior home care.

I am a backup person for those 2 and available in case of difficult issues or questions but won't do the administrative role of the Health Fund in future.

To develop a 6 day operating primary care service is crucial. At present Dr. Amarnath gets stretched and called, not because he is the most skilled doctor or most popular (not to say that he is not skilled but I guess you understand what I am trying to convey) but because he is available, 24/7.

The ambulance as well deals with non-emergency cases as primary GP care is available in very limited form.

If you think anything further from my side is needed, let me know.

Many greetings

Paula

Dan, 07 Dec. 2020

Health Sector - Policies - Programs - Projects inputs for development priorities

Project: Establish Health - physical & mental - as a main component of the growth and the sustainability of Auroville, and harmonize its content and shape in the light of Mother's teachings

NB: The points of a future policy could eventually match the related points in the program

*** = priorities for the coming 5 years**

Underlying pre-requisite conditions of the Project (5 years and above):

- The practices of health and wellbeing in Auroville should match the teachings of Mother. They should be innovative in a perspective of a holistic approach of medicine for then, be shared with the world, since Auroville is meant to be the city the world needs
- As much as possible, in order to achieve the aim, the individual perspectives should surrender to the collective benefit and efforts should be coordinated in management and collection of correlated data

Program (Policy to be created accordingly):

1. Regarding the database of the health practices in Auroville:
2. Regarding the individual and collective practice:
3. Regarding the overall organisation of the sector of Health in Auroville
4. Regarding health fund framework:
5. Regarding emergency situations:
6. Regarding the position of Auroville-Health in the world:
7. Regarding Mother's teachings on health:
8. Regarding the database of the health practices in Auroville:

Creation of a specific software / database to *:

- Create a directory of all therapists/practitioners in Auroville * (already initiated several times without final outcome, see last initiative with Academy of Healing Arts (Aurelio, Jocelyn, Krupa, Sangeetha, etc.) - Database and Registration July 2019)
- Collect harmonizingly the data of the 4 main sources of healing in Auroville *:
 - Health Centre of Aspiration
 - Santé
 - Therapists centres (Quiet, Pitanga, Vérité, etc.)
 - Individual practitioners
- Distinguish patients' visits related to *:
 - Ambulance

- Emergency and/or nursing
- Chronical diseases
- Cases shared with other TN or Pondy Hospitals/Clinics
- Mental/psychological issues
- Wellbeing & massages
- Etc.
- Introduce anonymous parameters of classification linked to *:
- Age
- Gender
- Social background
- Medical background
- Etc.
- 9. Regarding the individual and collective practice:
- Creation of a code of 'Ethics & Conduct' for all of AV's health & wellbeing practitioners * (already initiated, see last initiative with Paula (Santé) and other therapists and resources persons)
- Invitation for the practitioners of 'peer-covision' and continuing self-development *
- Invitation for the practitioners of on-going trainings to enhance their practice and knowledge *
- Invitation for the practitioners to train themselves on how to handle possible emotional-overwhelming reactions of their patients during their practice *
- Etc.
- 10. Regarding the overall organisation of the sector of Health in Auroville
- Promoting health as a main component of Auroville's further growth and sustainability *
- Creation of a specific horizontal structure to host all activities to be registered (under the Health Trust in Auroville, or another adequate structure to be identified and/or created), in order to * (Numerous actors have already brainstormed on the

creation of a Social hub, reports available on request):

- Centralize the data of all activities/stakeholders related to Health *
- Identify and incorporate the fields linked to wellbeing that are not specifically related to health (domestic violence, substance-abuse, inter-generational conflicts, financial issues, etc.) *
- Be the credible and acknowledged link/interface with the GOI, the Bioregion and the Health Structures in Tamil Nadu and Pondicherry (PIMS, JIPMER, etc.) *
- Fund-raise for self-development *
- Etc.
- Create and/or extend the missing structures in Auroville
- Maternity *
- Geriatric structures (already existing, Marika's Home & Mahalakshmi Home)
- Psychiatric ward
- End of life topics (Farewell, wills *, forms *, etc.)
- Etc.
- Creation of a common platform of communication between the different actors *
- Health-Centre & Santé **should** find a way to collaborate and harmonize their strategy and communication, in order to become complementary *
- Others
- 11. Regarding health fund framework:
- Identifying the practices to be covered (or not) by the Health fund
- Clear communication to the community with regard to refund-policy
- Collect funds for trainings for the practitioners (ex. with SAIER)
- Etc.
- 12. Regarding emergency situations:
- Reinforcing the field of action of a specific task-force in case of emergency * (already done, see the outcomes of Covid TF)

- Creating an inpatients structure with necessary medical care and equipment *
- Foreseeing and anticipating possible natural developments of the world/societies and into a city which may suddenly grow to reach 10.000 people, in terms of physical and mental issues *
- Identification/creation of a network of resources persons willing to help and support in all fields, especially with an increasing of challenging cases * (already initiated with the Third-Age group for the seniors)

13. Regarding the position of Auroville-Health in the world

- Creating specific data for the 'Auroville Experience' *
- Find new creative approach related to Mother's teachings on health
- Promote the relationships and collaboration with the related Tamil-Nadu health Institutions (JIPMER, PIMS, etc.) and in all India *
- Spread the Auroville Experience worldwide

14. Regarding Mother's teachings on health:

- Match the practices of health and wellbeing with the teachings of Mother
- Promoting and implementing these practices inside and outside of Auroville, by:
 - Creating of a Centre of studies on Mother's teachings regarding health in Auroville
 - Organizing national and international events regarding Mother's holistic approach and its implementation in Auroville
 - Creating a specific website dedicated to the above aim
 - Etc.

F.8- Water groups consultation report.

Dear all,

Smart water metering and network etc. is very necessary and I fully support the entire proposed policy.

Surface Water Management in ponds and swales for integrated potable water resource:

We don't know what is exactly going on under our feet.

For now, we could experience the abundant rainfall and see that most water bodies

filled up and spilled over.

For years I have been working and gradually increasing the capacity of these water bodies.

If we could identify which ones have the most impact on the aquifers, then these should be enlarged and deepened even more.

I still believe that all new buildings should have a proper rainwater harvesting system, which water could be used directly or guided into one of the water bodies for recharge.

Kireet - 24-12-2020, 14:54

F.9- Auroville Town Development Council consultation report.

No written inputs or feedback received

F.10- Auroville Council organised multi- working group presentation.

No written inputs or feedback received

WATER – inputs from Giulio (green) and Tom (red)		
Policy	Programs	Projects
A- Regulation for standardising of supply and consumption	1- standardised metering at points of supply & consumption, with dedicated meters for irrigation, to enable demands vs sources evaluation - data collection and mng	1- Map of pipeline network for each community / settlement 2- Smart water metering and network 3- Database with web-based interface for data access

WATER – inputs from Giulio (green) and Tom (red)		
B- Potable water security with conservation & multi-sourcing	<p>1 - Provide uninterrupted and efficient water supply networks</p> <p>2 - Water conservation measures combining consumer awareness and pricing slabs.</p> <p>3 – Meteorological data collection.</p>	<p>1- water demand study for incremental development of multi sourcing plan</p> <p>2- Strengthen and systematise the collection of Meteo Data within and around the city area in a 20 km radius (both manual and automatic)</p> <p>3- Storm Water Management for collection of water from roads and other common impervious surfaces</p> <p>4- Rainwater Harvesting Systems at household level for local consumption and / or discharge into common surface water bodies</p> <p>5- Surface Water Management in ponds and swales for integrated potable water resource</p> <p>6- Identification of best areas for groundwater recharge using excess water, and their protection from pollution</p>
C- Decentralised water recycling and reduce potable water demand	<p>1 - Development Regulations - mandatory recycling of all sewage</p> <p>2- Plan for recycled water use in toilets by 2025</p>	<p>1- Repair, improve and extend existing recycling systems including distribution.</p> <p>2- Provide for recycling systems in all existing and new developments.</p> <p>3- Safely integrate treated wastewater network for local reuse to provide for specific water demands.</p> <p>4- Creation of a central storage of treated wastewater in the central area (higher ground) of the city.</p>
D- Develop a technically sound and resilient system	1 – Centralise the operation, management and administration of the system	1. Develop, upgrade and support the scientific, technical and maintenance services

G- Reference

List of papers, documents and studies pertaining to Auroville planning and development

- 1- 2000- Auroville Master Plan - perspective 2025, endorsed by the residents' assembly and approved by the Ministry of Human - Resource Development - GOI (letter No.F.27-3/2000-UU- dated – 12th April 2001
- 2- 2001- Auroville mobility concept by Ballinger
- 3- 2003- Direction for growth - planning document (Asia- Urbs) – Lalit Bhati
- 4- 2004- Auroville Universal Township – Master Plan 2004 – Directions for Growth
- 5- 2009-Auroville Vision 2010-2015 -ISP Final Report (L'avenir d'Auroville Alon & Batel)
- 6- 2009 – Av topographical study maps– Prashant Hedao, Tejaswini Mistry & Dhurv Baskar
- 7- 2013-Implementation and Development Phasing Program 2013-18: IDPP -14-10-2013-Bankim. Kalra
- 8- 2013 - Economics for People and Earth - The Auroville Case 1968 – 2008 - Henk Thomas and Manuel Thomas
- 9- 2013- Surface Water as a Resource for Auroville City Area - A study exploring a multi-sourcing approach for Auroville with the integration of Matrimandir Lake. Gilles Boulicot, Pieree Taillandier, Pierre Veillat & others – CSR Auroville
- 10- 2013- Auroville Green Belt Development Plan – TDC - Achva Benzinberg Stein, F.A.S.L.A., and David Stein, A.P.A.
- 11- 2014 – Auroville Green Belt Land use Plan - David Stein, A.P.A.
- 12- 2014- Auroville City Area- Land suitability and land use proposal – L'Avenir D'Auroville – TDC – Suhasini Ayer-Auroville Design Consultant
- 13- 2014- Master plan; Mother's evolving brief, Roger Anger's evolving models, and related matters – Gilles Guigan
- 14- 2015 - AV Retreat Final Report draft v7.5
- 15- 2015_Energy_Water_Efficiency_Master_Plan- Auroville consulting
- 16- 2017 -SURP - Growth Management Framework for Settlements in Auroville Green Belt 2017 (AIS I & Queens Canada)
- 17- 2018 - Tourism Impact Management Framework for Auroville, India
- 18- 2018- Auroville in Mother's words – Vol-1 – Gilles Guigan
- 19- 2018- Auroville in Mother's words – Vol-2 – Gilles Guigan
- 20- 2019-Feb-Working Committee & GOI Grant group - Annex 4B Note on Priorities for GOI funding – 53rd GB meeting
- 21- 2019-Feb-GAES presentation to 53rd GB- FAMC Report

H- Acknowledgements:

- 1- Secondary data collection team, sources, reports and studies
 - a. Auroville Foundation office (Sec: Mr. M. Chunkath, U.Sec: Mr. Srinivasamurthy and Mr. Basu)
 - b. Unity fund – Rathinam, Lyle and Meena
 - c. Saiier – Chali, Kristen and Michael Gransitzki
 - d. L'Avenir d'Auroville – Tejaswini, Sreevatsa, Induja, Hari and Priya
 - e. GOI group – Michael Gransitzi, Hemant, Sauro and Subbhu
 - f. Housing Service – Sonja and Ole
 - g. Entry Board and Entry group
 - h. Aurostats – Talam, CSR

- i. Auroville Energy Services (Ponnuswamy, Ramesh, Slava)
- j. Center for Scientific Research – Guilio, Pavneet and Gilles B
- k. Vikram Devatha
- l. Social Research Center, CSR – Harini Sampath
- 2- Primary data collection team via field studies and interviews
 - a. Auroville Schools: Last school, Future school, Transition school, CF kindergarten, Nandanam, Deepanam and Creche
 - b. Auroville Health: Auroville Health Center, Sante & Auroville health fund
 - c. Social Research Center - Harini
 - d. Auroville Consulting – Martin S, Vimal B and Ribhu Roy
 - e. Auroville Design Consultants – Suhasini Ayer, Ramya Prasad, Maud Udin, A. Gnana Arul, Deepti Tambrallimath, Vaidehi Desai and Jigar Rathod
 - f. Auroville Energy Services (Ponnuswamy, Ramesh, Slava)
 - g. Vikram Devatha
 - h. Sandeep Dabral
 - i. Michael Gransitzki
- 3- Advisory Group
 - Tejaswini Mistry, Harini, Stephan Himmer, Vikram Devatha, Paula, David Nightingale, Elvira, Manas
- 4- Focus group participants
 - Basic needs and amenities - Martin S, Nicole, Angelika, Toine, Tomas, Tejaswini, Gilles B & Suhasini

Social Welfare - Jean Yves, Jyoti K, Lucas, Mr. Srinivasmurthy, Sonja, Vivek, Sreevatsa, David, Paula, Dan, Xavier and Hemant

Economy -Abha T, Chali, Sauro, Ulli, Carel, Mita R & Suryama

I – List of Figures

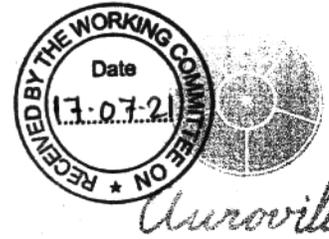
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Please note:

- 1- *The study has not yet been proof read and edited. If there are errors of spelling, grammar and paragraphing, please email suhasini@auroville.org.in with details*
- 2- *The study has been done with an MoU with Auroville Town Development Council and is undertaken to enable “evidence based” detail development plan preparation. If there are errors and / or oversight in the data presented, please email suhasini@auroville.org.in with the data source and revisions to be integrated*

P. R. SRINIVASAMURTY
UNDER SECRETARY



No. AF/M/63/

15 July 2021

OFFICE ORDER NO. 491

Subject: Re-Constitution of the Auroville Town Development Council (ATDC)

1. Whereas the Governing Board, vide Standing Order No. 6/2011 dated 1st May 2011, had constituted the Auroville Town Development Council (hereinafter referred to as "ATDC") for the purposes mentioned therein;
2. Whereas the Residents' Assembly through the Working Committee recommended the names of the Residents of Auroville vide their letter 14th July, 2021 to the Secretary, Auroville Foundation, Governing Board for the purpose of constituting Auroville Town Development Council; which was last revised on 29th November, 2017.
3. Now, therefore, the Secretary, Auroville Foundation, after careful consideration, reconstitutes Auroville Town Development Council with the following residents recommended by the Working Committee, as its members:

S. No.	Names
1	Shri. Anbu Velayudam
2	Shri. Toby Neumann
3	Shri. Saravanan Mahalingam
4	Shri. Sreevatsa Rameshbabu Govindass
5	Shri. Lakshay Dharan

4. The Working Committee also recommended to nominate **Ms. Elaine Catherine Phillips**, Auromodele, Auroville, as a nominee of the Working Committee to the ATDC.
5. On behalf of the Secretary, Auroville Foundation also nominates **Shri. Debabrata Sahoo**, Kalpana, Auroville, in the Auroville Town Development Council.
6. **Ms. Vidya Angurajan**, Udavi School, Auroville, is also nominated as an apprentice for one year who will be reviewed after six months.
7. The term of office of the Auroville Town Development Council shall be 2 years from the date of issue i.e. 15th July, 2021.

O/C

AUROVILLE FOUNDATION

To be continued...

8. Without prejudice to the above decisions, the Governing Board, in consultation with the Working Committee, may co-opt new members from time to time and, as agreed to by the Working Committee, may also replace such members who, for various reasons, are not able to contribute adequately to the process of planning and development, by other nominees recommended by the Working Committee.

This Office Order issues with the approval of Secretary, Auroville Foundation and shall come into force with immediate effect.


15/3/21
(P. R. Srinivasamurty)
Under Secretary
Auroville Foundation

Copy to:

1. All Members of the Auroville Town Development Council, Auroville
- ✓ 2. The Working Committee of the Residents' Assembly, Auroville
3. The Funds & Assets Management Committee, Auroville

AUROVILLE CROWNWAY STUDY

-- Prashant, Lata, Suhasini, Dharmesh & Tejaswini (Auroville)
(For correspondence and feedback please write to: prashant@auroville.org.in)

INTRODUCTION --

This study of the Crown, as proposed by the [Town Development Council \(TDC\)](#) of Auroville, lays out the existing ground realities and present uses. Based on this it also lays out what is suitable (proposed uses) and a rough timeline. This is for the different sections along the full stretch of 4.36 kms of the Crown as it passes through various human and physical geographies of Auroville. Some sections have more details than others and that is based on how much each section has so far been developed.

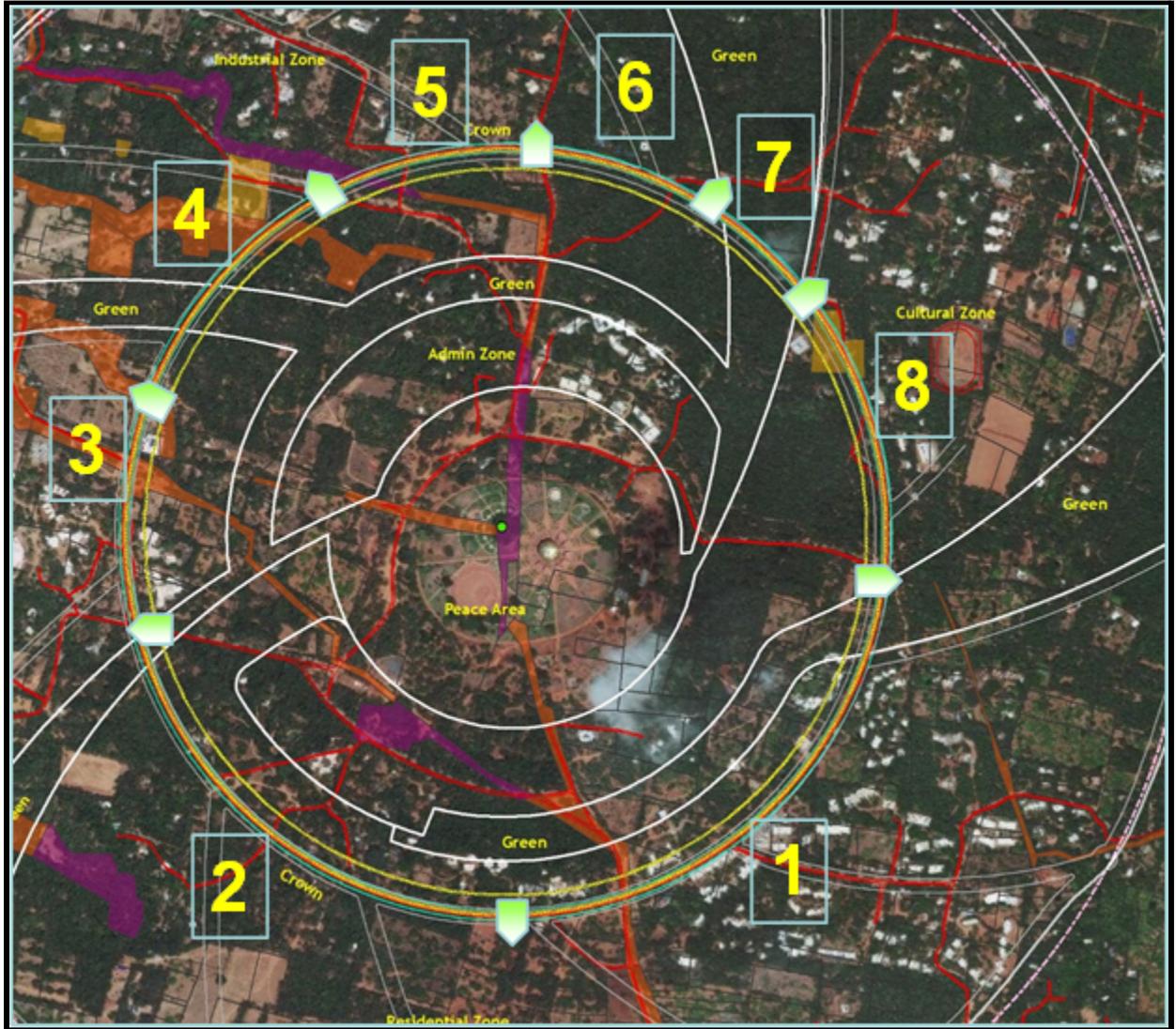
This study was presented to AV Foundation Secretary Dr. Jayanti Ravi on 31st August 2021, where Sreevatsa from TDC was also present. This was also presented to the community in a GM on 17th Sept 2021.

CROWN SECTIONS & KEY PLAN --

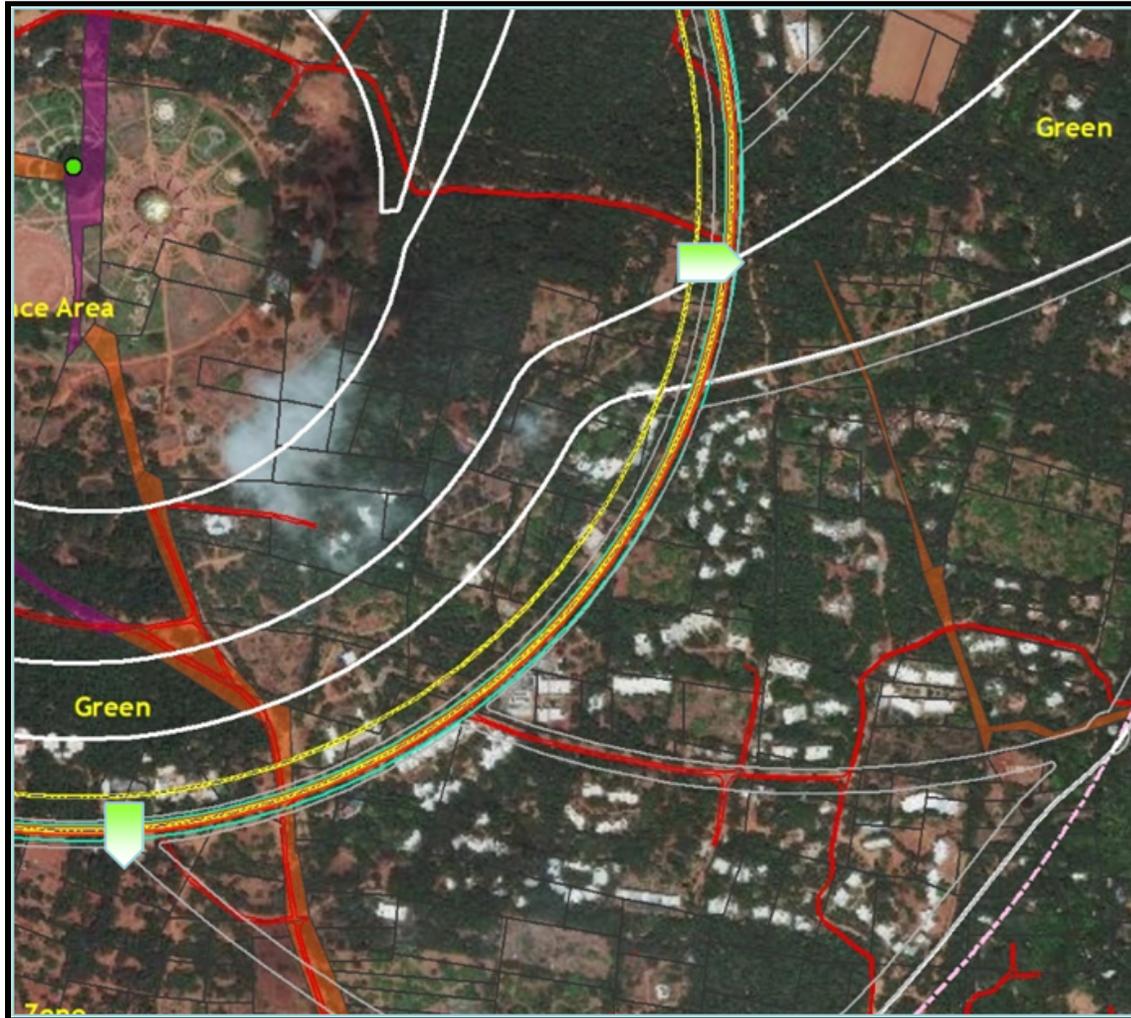
The Crown passes through 4 zones - **Residential**, **International**, **Industrial** and **Cultural**. It also passes through 4 parks that are in between these zones - **Mahalakshmi** (between Residential & Cultural), **Mahakali** (between Cultural & Industrial), **Mahasaraswati** (between Industrial & International), and **Maheshwari** (between International & Residential). So based on the existing land use, current site conditions/ground realities, and what is proposed there, the Crown could be logically divided into eight different sections (see below) --

1. [Arka to PTDC](#)
2. [PTDC to BN/MM Road](#)
3. [BN/MM Rd to Language Lab](#)
4. [Darkali Forest](#)
5. [Darkali to CSR Road](#)
6. [CSR Road to YC/Bliss](#)
7. [YC/Bliss Forest](#)
8. [Bliss Forest to Arka](#)

KEY PLAN --



Section 1: FROM ARKA / MAHALAKSHMI HOME TO PTDC



Context / Topography --

This stretch is part of the residential sector - low density (near Mahalakshmi Home) to higher density (near PTDC) and Mahalakshmi park between residential and cultural zones. Largely at the same level as it is parallel to the Auroville ridge with elevation ranging between 52m and 50m above MSL (mean sea level). The Solar Kitchen roundabout is the highest point on the Crown at 52m above MSL. Water from this area drains eastwards towards Sukhavati canyon and finally into the Utility canyon.

Present Uses --

A 3.9m wide paved road (w/ paver blocks), largely used by slow and fast (sometimes very fast) moving motorized vehicles (2-4 wheelers). This currently generates noise and air pollution and could be very unsafe for moving/crossing pedestrians and cyclists. Not very conducive for this section of residential zone because it has the following along it:

- Collective facilities - Senior citizens residence, health clinic, farewell center, Av library, solar kitchen and PTDC. As part of sector 1 &2 of the residential zone, it also has housing projects on the crown - Surrender, Humanscapes, Kalpana, Kailash.
- Private land between surrender & humanscapes

It also has a narrow unpaved cycle/pedestrian walking path all along the road on the inner side.

Proposed Uses --

Activities supporting the residential zone sector 1 & 2 which would eventually house about 5000 residents. This would include shopping, coffee shops, theatre, interaction outdoor/semi indoor spaces, plazas recreation and community facilities of higher order, supporting the residential use

Timeline --

IMMEDIATE --

This stretch needs serious improvements. It could be achieved in several ways, such as -

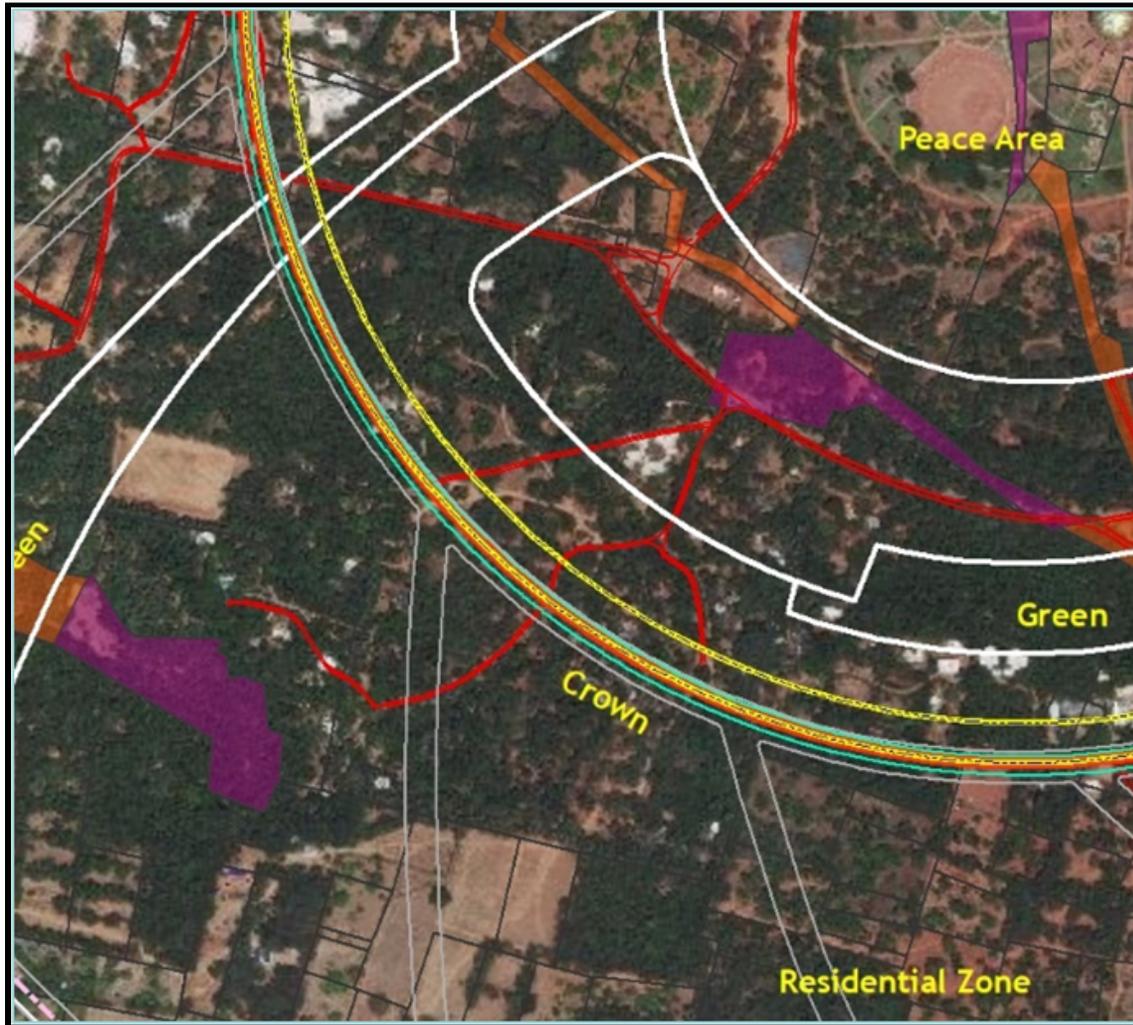
- **Divert “passing” traffic away from this section of the Crown.** Only residents and visitors, delivery personnel to the residential zone and going to schools in the Cultural zone should be using this stretch. This should be achieved through a “smart mobility plan which could be short term/temporary” that diverts most other traffic towards Solar kitchen → MM Visitor gate → town hall or towards Bharat Nivas.
- **Innovative design to slow down the traffic** which can’t be just putting speed breakers (see visuals/images), rather by design that gives a priority/”right of way” to pedestrians first, then cyclists, 2-4 wheelers, in that order.
- **Design and build plazas** that will have public interaction outdoor/semi indoor spaces integrated with green spaces/trees, completed with street furniture, lighting, innovative signages, etc. in select locations e.g. outside the library, around Sante/Arka (locations TBD).
- **Move away from the 16.7m/30m ROW street cross-sections,** those are designed for, and therefore invite fast moving vehicles. This may involve not having a straight uninterrupted curved road, removing and rearranging the existing paver blocks in innovative ways to integrate with these spaces.
- **Design shaded designated parking spaces** around these plazas

LONG TERM --

- Mobility plan for the residential zone, that further reduces residents’ motorized traffic from this stretch.



Section 2: FROM PTDC via CENTER FIELD to BN/MM PAVED ROAD



Context / Topography --

Currently this section passes through a wooded area with some houses and guest houses. In the master plan this section of the residential zone is designated as high to very high density residential sectors and is also home to one of the only natural water bodies (Aurodam canyon) in the city area. The level of 51m above MSL (mean sea level) drops to 47m by the time you reach the BN/MM paved road, a stretch of about 950 meters. All water from this stretch of the Crown flows westwards into the Aurodam canyon which eventually overflows past the Visitor Centre into Irumbai *eri*.

Present Uses --

Single family houses and guest house (center guest house, joy guest house, college guest house) and woodlands, reforested TDEF forest closer to Aurodam canyon.

Proposed Uses --

This being high to very high density residential areas is not likely to be developed in near future, and should only develop after Auroville's residents' numbers go up. Therefore at this time only a cycle path should be allowed connecting solar kitchen/PTDC to Savitri Bhavan/BN-MM Paved road. NO ROAD WITH MOTORIZED TRAFFIC SHOULD BE BUILT NOW. Doing that will only increase the village traffic passing through Auroville and provide one more opening for exploratory visitors traffic.

Timeline --

The paved road that will have motorized vehicular traffic in this stretch is NOT NEEDED at this point because the current road from Solar Kitchen → MM Visitor Gate → Savitri Bhavan is a fully paved area and serves the purpose with not too much traffic moving on it to demand an additional connecting paved road.

IMMEDIATE --

- A nice shaded cycle path meandering through the trees that connects Solar Kitchen/PTDC to Savitri Bhavan/BN-MM paved road is desirable, which will be used by cyclists and walking enthusiasts. No motorized vehicles.
- Some stopping points in the green areas with seating furniture made out of natural material.
- Walking trails leading up to Aurodam Canyon for forest walks. This could also be used as an educational forest walk by the students of three kindergartens that are in this area.

LONG TERM--

- Revisit the high density residential area classification currently in the master plan to protect Aurodam canyon which is a very important water conservation area and buffer area around it should be left as green as possible.



Aurodam:



Section 3: FROM BN/MM PAVED ROAD to LANGUAGE LAB



Context / Topography --

This section of the Crown is part of the International zone and it drops from 49m above MSL (mean sea level) at BN-MM Road to about 42m into a canyon close to the Darkali fence. And the whole area (and canyons on peramboke land) slopes towards Kottakarai (westward). Existing road used by Aurovillians to get to Savitri Bhavan, Unity Pav & AV Language Lab. But main traffic is of the villagers coming into Auroville from Kottakarai/Bharatipuram and for them to pass through to go to Kulapalayam and ECR/Pondy.

Present Uses --

This section has institutional buildings such as Savitri Bhavan, Unity Pav and AV Language Lab. Outside of the Crown; there is Bharat Nivas campus and local village settlement along the peramboke lands. Has current traffic of employees, vendors construction traffic and village traffic as mentioned above.

Proposed Uses --

Utilities, communication, shops and other common facilities related to the main activity in the International Zone, including housing and staff quarters.

These would be needed as and when there is sufficient development in the international zone

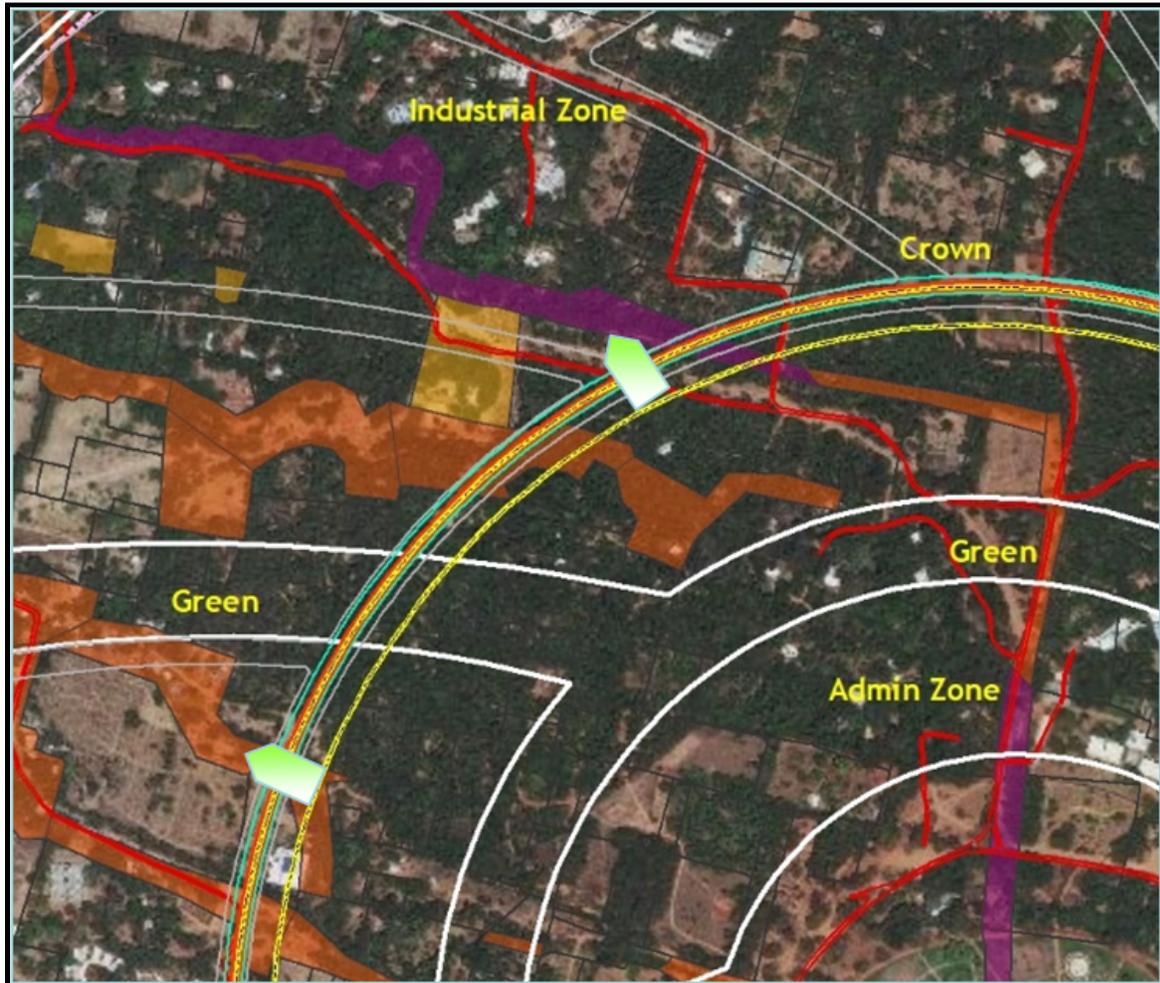
Timeline --

Along with the road, parking needs to be organized for visitors to the institutional buildings, especially many vehicles during an event/community meeting. A common pedestrian plaza that links all the three institutional buildings, and maybe also linking it to the Bharat Nivas campus.

Centre of International Research in Human Unity (CIRHU), 1999- proposal of Kireet Joshi (it was originally meant to be on the crown in the international zone). This would allow cross pollination/research btw Auroville - extended Region - India - World

Planning and design of this section of the Crown should be integrated with the International Zone master plan and how it is planned and integrated with the detail development plans of the zone

Section 4: DARKALI FOREST



Context / Topography --

A beautiful forested area (approx 50 acres) in between two canyons one to the north and the other one on the south side and therefore it is also the lowest point in the Crown at about 40m above MSL (mean sea level). These two canyons drain little over 60% of the area inside the Crown. This is also located in an area that has well drained soil which means it has high water percolation, which is good for aquifer/groundwater recharge. Most of the surface runoff is captured in the multiple water ponds within this forest, using bunds and check dams, and very little water overflows into the canyon (only during heavy continuous rains) going towards Kottakarai.

It is also very close to the Kottakarai village settlement (the only village in the city area) that makes it vulnerable to being misused for alcohol picnics, drugs peddling, prostitution, timber theft, garbage dumping, and various forms of harassment, etc. Currently this forest is fenced and also has a live vegetation barrier along the fence.

Present Use --

Regenerated forested area from a barren eroded landscape over the last 35 years. Important water conservation area with bunding, check dams, and natural/newly created ponds. There are several small special gardens and the west side of the forest has a 1.2 kms long winding fitness track.

Proposed Uses --

Should be left untouched as far as possible, in fact the current activities and efforts of water conservation, reforestation and protection from unwanted elements should be supported by Auroville. Because of proximity to village/settlements, It should have controlled access to the trails, gardens and fitness track for Aurovillians to enjoy..

Timeline --

Considering the proximity to the village/settlements and past and current unwanted activities this area SHOULD NOT be opened to any thoroughfare and cross traffic, NOT even as a cycle path. Controlled access for walking/jogging should be maintained, and more resources should be allocated for maintaining these activities and this ecologically sensitive area for water conservation and maintaining the green cover.

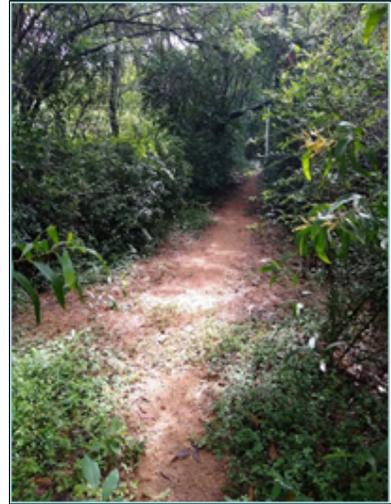
IMMEDIATE --

- If at all for symbolic purposes it is deemed that for completing the circle and maintenance vehicle access is required, a curved walking path could be put in place but should be ONLY INTERNAL and not connected to outside paths and roads for security and other reasons mentioned above.
- Water conservation efforts could be creatively made interesting with rocks/artwork etc. by Auroville artists.
- Provide support and human resources to maintain the controlled access to walkers/joggers and over all security.

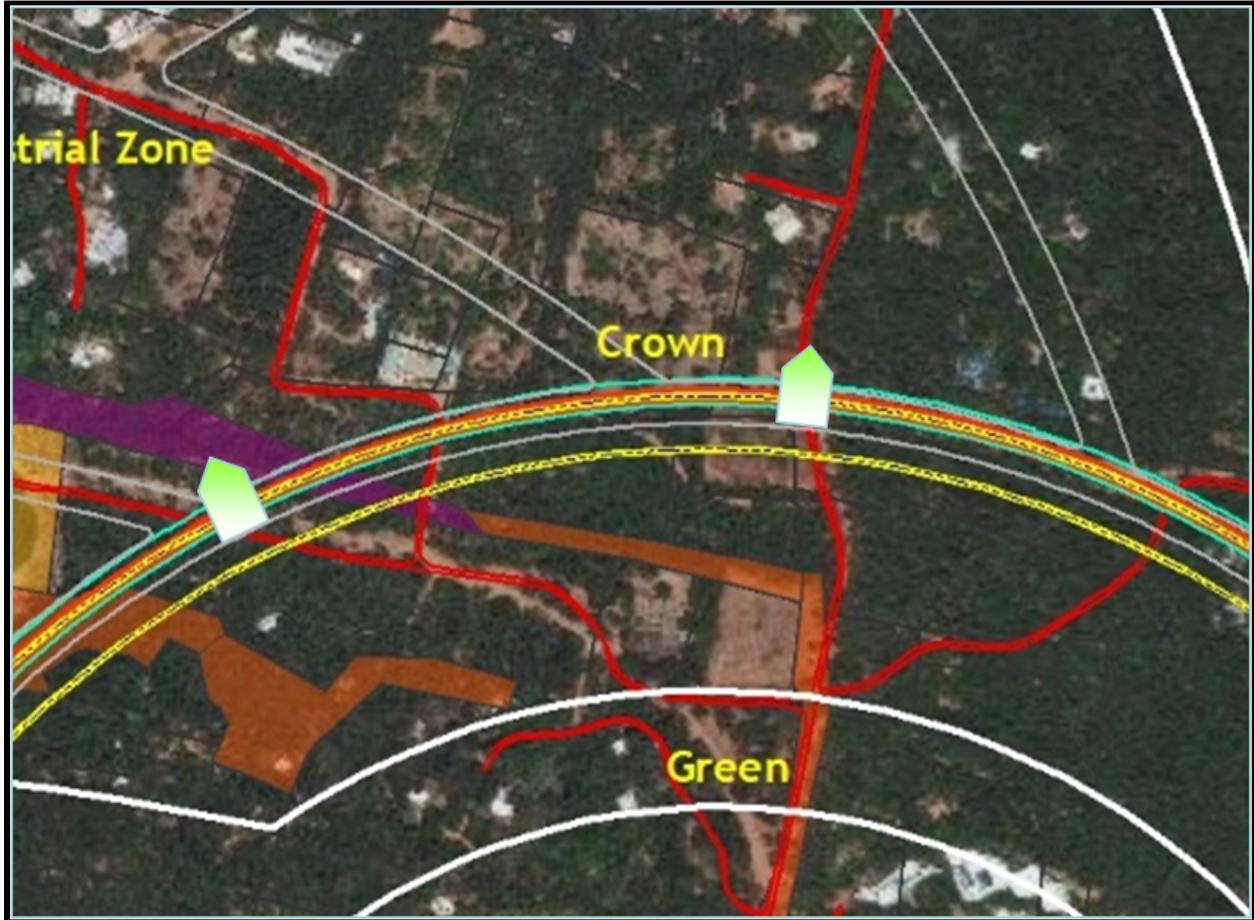
LONG TERM --

- As we resolve the *planning challenges of Auroville's interface with surrounding villages*, this area could be opened up in the future based on solving issues as they emerge. The interface between how surrounding villages merge into cities as they expand is a challenge that no city in India and the world has been able to address in an amicable way and this is a planning challenge that we have an opportunity to experiment with given our setting. We have a strong interface with villages and people living there and that could be related to traffic, livelihood (our workforce comes from the surrounding villages), water conservation, security, etc.

Darkali (water harvesting work):



Section 5: FROM DARKALI to CSR-TOWN HALL ROAD



Context / Topography --

This section is part of the Industrial Zone. It starts from the Darkali canyons (lowest point in Crown) this section of the Crown rises up to 50m above MSL (mean sea level) at CSR Road and is still sloping westward towards Kottakarai.

Present Uses --

This stretch has several privately owned plots (3), passes over a major canyon on peramboke land that flows westward towards Irumbai eri. A Kali temple bordering Darkali (on Temple land) which has village social gatherings and festivals. This section also AuroOceanic building (a privately built resort on private land) nearby on the Crown, and little away from the crown on the outside there are some houses, Pony Farm and some workshops

Proposed Land Uses --

Adjoining Darkali park and International Zone transitioning into the Industrial Zone. Ideal place to have hostels, dormitories, guesthouses and supporting facilities for the main activities in the Industrial zone (Ref: the Auroville Master Plan: Perspective 2025).

Timeline --

While developing this area planners should consider the special eroding nature of the soil condition, slopes, canyons, water flow and its management and keep a good balance of green & built areas for top soil conservation.

Planning and design of this section of the Crown should be integrated with the Industrial Zone master plan and how it is planned and integrated with the detail development plans of the zone

Section 6: FROM CSR / TOWN HALL ROAD to YOUTH CENTRE / BLISS FOREST



Context / Topographr --

This section is part of the Industrial Zone, a largely flat section of the Crown at about 50m above MSL (mean sea level) as it is close to the ridge. It is largely on privately owned land, and this section is paved (just like SK to Arka). It has green forested areas on both sides

Present Land Use --

Lands between the CSR - Townhall road to the youth center is privately owned with agreement to develop and use the existing paved road. North of this paved road is extended part of the Revelation forest (which is part of Mahakali Park) with some residences (Sve Dam). It has the Youth centre with residences, workshops and social amenities towards the east. The paved road ends at the Youth Centre fence.

Proposed Land Use / Projected development --

Ideal place to have hostels, dormitories, guesthouses and supporting facilities for the main activities in the Industrial zone as this zone develops (Ref: the Auroville Master Plan: Perspective 2025)

Timeline --

Planning and design of this section of the Crown should be integrated with the Industrial Zone master plan and how it is planned and integrated with the detail development plans of the zone

Section 7 - YOUTH CENTRE / BLISS FOREST



Context / Topography --

This section passes through the Mahakali Park. It is on high ground almost on the Auroville ridge at about 50m above MSL (mean sea level) and includes about 20 acres of restored TDEF forest. The water from here flows westwards towards Kottakarai through the industrial zone canyon just north of Darkali forest. Being on the high ground and also part of a high percolation area, it has a low impact land use and green cover.

Present Uses --

Largely forested area, part of Bliss forest. It houses the Auroville International Youth Center which was started in 1996. It is a community where youth from within Auroville and youth from outside interact, create, live, build and grow together. It has become a home away from home for many and a place of community for many.

Proposed Uses --

- **Clumps/groves of trees planted with specific species**, e.g. ebony, and other similar trees. A short walking detour that takes you to these groves and people learn about them and importance of these tree species
- **Bliss/YC is very close to schools. Have school kids come for forest walks** as part of their ecology/environment class and learn about these special tree species , learn to identify them from leaves, tree/branching structure, bark, fruits/flowers, etc? This will need coordination with school teachers/SAIIR.
- **Ecology or maybe specific to TDEF interpretation centre (outdoor/indoor)**
Connected to the YC and where children/adults could learn about TDEF trees and the ecology of tropical dry evergreen forests, few desks/chairs for them to read the reading material on TDEF kept there, or just a place to interact with a forester and learn more about TDEF/ecology of the Auroville forests.
- Eventually we should have an **Auroville Centre for Ecological Studies** for research in ecology and environment, with tie-ups with other research institutes in India (CES/IISc, ATREE, FRI, etc.), and the rest of the world.
- **Stopping point/pit stop for bikers/pedestrians** where they can get water (maybe juice, tea, coffee) and some indoor/outdoor seating area where people could plan to meet to learn something or just for a social interaction. A place, spaces designed by architects/landscape architects where people would want to revisit.
- **Children Play Area** created with natural material, where we could teach kids e.g. tree climbing, play with sand/soil, etc. Being a forested and ecologically sensitive area, low impact land use should be permitted, should not disturb the tranquility and peace.

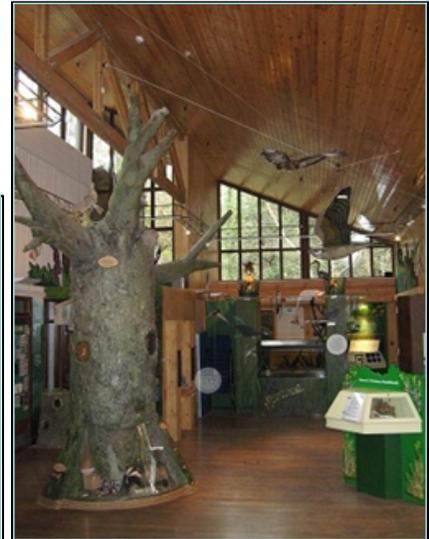
Timeline --

IMMEDIATE --

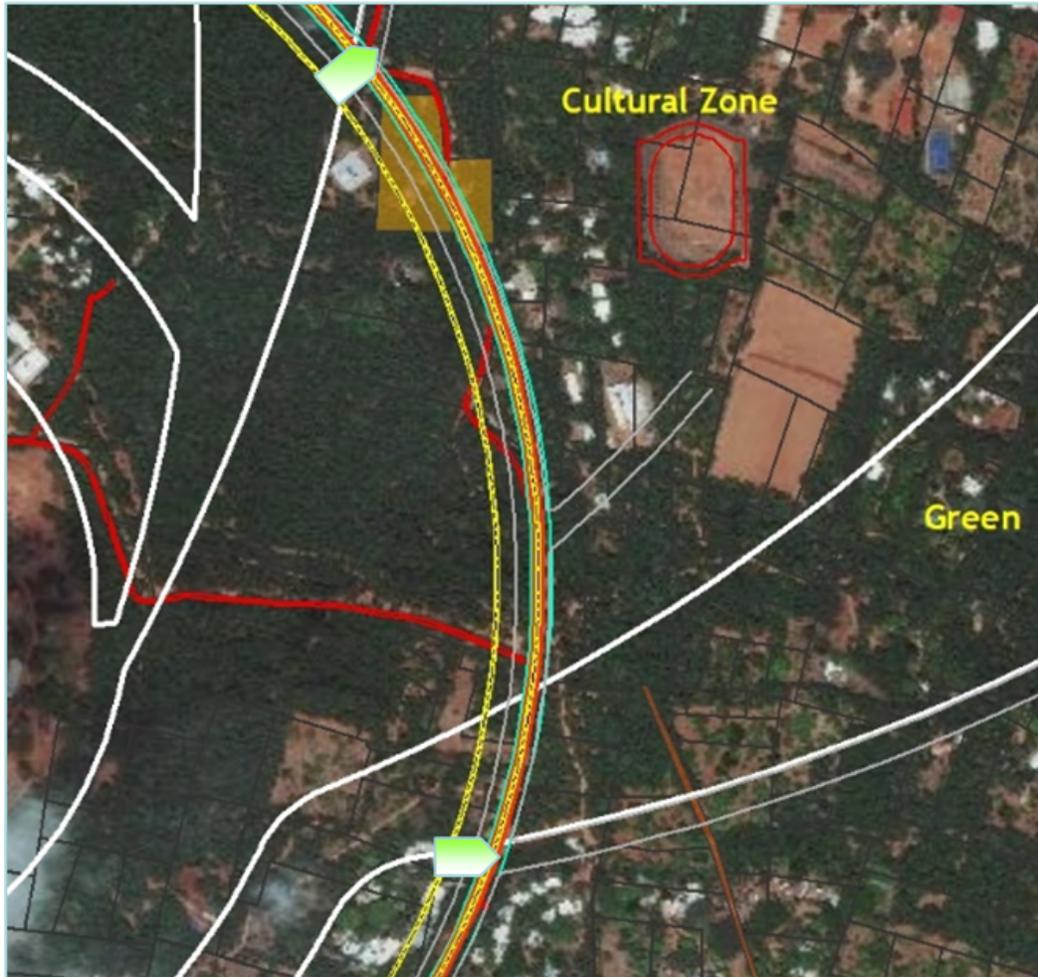
- Cycle/pedestrian path to be used to access the Youth Centre. The current vehicular access from the current road on the north side stays. No vehicular access, there is already a road that exists that goes around Bliss forest, it should be used for vehicles and infrastructure lines.
- Add ecological interpretation detour trails from the main cycle path and start work on the ecological interpretation centre.

LONG TERM --

- Development of Youth Centre vocational training programs. Start new programs.
- Improve their current residential units as needed, and plan more units to meet the current needs of the youth.



Section 8: BLISS FOREST TO ARKA



Context / Topography --

This section is part of the Cultural Zone, a largely flat area at 52m above MSL (mean sea level), and almost on the Auroville Ridge. Has a piece of the Temple land and a few privately owned plots in this section and the existing road weaves around these plots. Adjoining Auroville land on the inside of the road is part of the Bliss forest, and the southernmost section passes through the Mahalakshmi Park, the park between Residential and Cultural Zone.

Present Uses --

Outside of the crown there is mixed institutional development - residential with performing and decorative arts centre, and studios. While inside the crown it is largely woodlands (Bliss forest), cycle / walking / jogging tracks, few residences and contemplation spots in nature. Whereas on private lands, there are homestays and residences adjacent to Kalaboomi - Cripa.

Proposed Uses --

Being part of the Cultural Zone in this section of the crown, there could be shopping, utility, communication and recreation centres, and related facilities supporting cultural activities in the zone, including related housing (Ref: the Auroville Master Plan: Perspective 2025).

Timeline --

This area is already well developed with walking - cycling - jogging paths on the inside. It should have limited vehicular access (by design) to ensure a quiet corridor linking the Residential and Cultural Zones.

This areas should have a linear pedestrian plaza, interaction spots/areas, linking/connecting the institutions on this stretch of the Crown.

Whatever activities, new buildings that are proposed on this stretch should conform with the activities and planning/design of the Cultural Zone and respect the green forested area on the inside of the Crown.

And finally the planning and design of this section of the Crown should be integrated with the Industrial Zone master plan and how it is planned and integrated with the detail development plans of the zone



Poongkhulali B <poongkhulali.b@gmail.com>

Fwd: Summary of the meeting on Av Planning and Crown Development - 31.08.21

sandeep vs <san.sandy10@gmail.com>
To: poongkhulali.b@gmail.com

Thu, Dec 16, 2021 at 6:18 PM

Begin forwarded message:

From: Suhasini <suhasini@designconsult-av.com>
Subject: Fwd: Summary of the meeting on Av Planning and Crown Development - 31.08.21
Date: 16 December 2021 at 18:18:03 IST
To: sandeep vs <san.sandy10@gmail.com>

----- Forwarded Message -----

Subject: Summary of the meeting on Av Planning and Crown Development - 31.08.21
Date: Thu, 21 Oct 2021 15:02:13 +0530
From: Suhasini Ayer <suhasini@auroville.org.in>
To: Jayanti Ravi <jayanti.ravi@gmail.com>, avfoundation <avfoundation@auroville.org.in>, fabian ostner <fabian-ostner@auroville.org.in>, Lata Iyer <lata@auroville.org.in>, Prashant Hedao <prashant@auroville.org.in>, Tejaswini . <Tejaswini@auroville.org.in>, Sreevatsa L'Avenir . <sreevatsa-avenir@auroville.org.in>

Dear Dr. Ravi

Sorry for the delayed summary report on the "Av planning and crown development issues" meeting that took place on 31st Aug'21 at the conference room of the Av Foundation office.

The study was undertaken on your request to Prashant on the 24th Aug'21.

Your inputs are welcome

regards

suhasini

--

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 **20210831-AvPlanning&CrownDevelopment.pdf**
84K

Present: Shri. R. N. Ravi, Chairman, Auroville Foundation, Dr Tamilisai Soundararajan, Shri. Aravindan Neelakandan, Prof. Goutam Ghosal, Prof. R. S. Sarraju, Members, Governing Board and Dr Jayanti S. Ravi, Secretary, AF.

Dr Nirima Oza, Smt. Darshana M. Dabral, Joint Secretary & Financial Advisor and Smt. Neeta Prasad, Joint Secretary, Ministry of Education, Government of India attended online. Prof. N.G. Basappa could not attend.

Dr Nirima Oza could not participate in the online meeting effectively due to connectivity issues.

Secretary, Auroville Foundation (AF) welcomed the Hon'ble Chairman and Governing Board members and gave a presentation, which includes a work plan outline for the period 2021-2022 to 2025-2026 focusing on the growth of Auroville as per the vision of the Mother.

Secretary informed the Board that she had prepared the presentation after studying and compiling decisions already taken in previous Governing Board meetings and her interactions with various Auroville working groups and residents.

Chairman and members of the Board appreciated the detailed and comprehensive analysis of the various issues, challenges and proposed ways forward for the integral development of Auroville. The Board took decisions and made observations as detailed below.

1. Governance

The Board noted the following in relation to the present status of governance and organisation in Auroville:

- 1.1. There is a proliferation of groups and discussion forums.
- 1.2. There seems to be decision paralysis or the inability to put decisions into practice.
- 1.3. The Residents Assembly is seen by many as a decision-making body for even operational issues that are under the responsibility of working groups.
- 1.4. The absence of work plans or governance and organisation that ensures implementation of work plans.
- 1.5. Culture of “stakeholders” seems to have replaced the culture of “voluntary contributors” / “willing servitors”.

- 1.6. Working group member selection processes include conventional canvassing and voting.

The Board is of the view that the following action needs to be taken in relation to Auroville governance and organization:

- 1.1. Decision-taking in Auroville needs to be driven by the ideals given by the Mother.
- 1.2. There is a need for the preparation of work plans for each work area of Auroville by the respective working groups. These work plans must relate to the realization of the ideals of Auroville including township development, governance, economy, education and research.
- 1.3. Selection of human resources for working groups must be done with reference to the skill sets, experience, commitment and engagement needed for the implementation of the ideals of Auroville in general and work plans of working groups in particular.
- 1.4. There is a need to promote a culture of engagement, transparency, commitment, accountability and integrity.
- 1.5. The initiative to have contact persons / coordinators for residential communities to engage with residents for cultural, academic and other activities that strengthen the spirit of goodwill and harmony may be continued through periodical interactions with the contact persons / coordinators.
- 1.6. The Working Committee must assist the Governing Board with the implementation of decisions taken by the Board within a time frame.

2. Township Development

The Board noted the following in relation to the present status of Auroville Township development:

- 2.1. Presently Auroville has a population of about 3,500 persons scattered over a large land area (also outside the Auroville Master Plan area).
- 2.2. There is scattered, sporadic and ad-hoc development resulting in high-cost infrastructure and lack of a cohesive social fabric.
- 2.3. Master Plan right-of-ways (the Crown, radials, outer ring and international zone loop, etc.) have not been cleared, resulting in haphazard infrastructure development at high installation and maintenance costs.

- 2.4. There is a lack of focus on the development of the township amongst the various working groups and Auroville residents.
- 2.5. The low population dispersed over a vast land area, results in scattered habitation and land protection issues.
- 2.6. Housing and other facilities to be developed to welcome more people with commitment to the ideals of Auroville.

The Board is of the view that the following action needs to be taken to accelerate the development of the Auroville Township:

- 2.1. On the occasion of Sri Aurobindo's 150th birth anniversary, a fresh impetus must be given to realise the Auroville Township in accordance with the Auroville Universal Township Master Plan within a time frame.
- 2.2. The Governing Board noted and endorsed the decisions already taken by the previous Governing Board on Auroville Township Development including planning and development as per the Auroville Master Plan and engagement with the Tamil Nadu Government to obtain statutory land use regulation (New Town Development Authority) for the Auroville Master Plan area to ensure land use as envisaged in the Auroville Master Plan.
- 2.3. The ATDC (Auroville Town Development Council) needs to have a work plan, with clearly defined deliverables, time lines, a human resources plan and annual budget.
- 2.4. ATDC membership selection / nomination to be done with a focus on competence, skills, work experience, and a commitment to plan and develop the Auroville Township in accordance with the Auroville Master Plan.
- 2.5. The ATDC needs to complete the work of preparation of Detailed Development Plans (DDPs) based on the Auroville Master Plan.
- 2.6. Build the township infrastructure backbone (water, electricity, communication, sewerage, etc.) along the fully cleared RoWs to enable planned urban development.
- 2.7. A tree plantation drive may be initiated with immediate effect only in the green belt and the green corridors / network inside the city area as provided for in the Auroville Master Plan.
- 2.8. All Master Plan deviations on the land earmarked for the Crown have to be cleared so that the circular Crown Road and related infrastructure can

be built without further delay. A similar exercise shall be implemented for the twelve radials and the outer ring road, where land ownership permits.

- 2.9. The work on the completion of the Matrimandir gardens and the lake may be accelerated.
- 2.10. Housing development to accommodate (young) Aurovilians must be undertaken.
- 2.11. New education facilities may be built, while ensuring utmost utilization of the existing ones.
- 2.12. Development of the Industrial Zone is essential to make Auroville the self-supporting township as envisaged by the Mother.
- 2.13. The Board endorses Office Order 491 dated 15th July 2021 (read with corrigendum dated 25th October 2021) issued by the Under Secretary AF with the approval of Secretary AF for the nomination of members of the Auroville Town Development Council (ATDC), including a nominee by the Secretary, Auroville Foundation (AF) on behalf of the Governing Board. Secretary AF is authorized to nominate the Governing Board's nominee on the ATDC as and when required for smooth and efficient functioning of the ATDC.
- 2.14. A budget outlay of Rs. 1,000 Crores is approved by the Board for Auroville Township development for the period 2021-22 to 2025-26 on the basis of the budget prepared by the ATDC. Detailed budget estimates may be prepared by the ATDC and scrutinized by the Secretary, AF for submission to the Ministry of Education. Expenditure to be incurred with an effective and transparent monitoring and reporting system.

3. Land

The Board noted the following in relation to the present status of Auroville lands:

- 3.1. There are private developments (residential and commercial) both in the city area and in the greenbelt.
- 3.2. There is slow progress in city land consolidation.
- 3.3. Some lands of the Auroville Foundation have been encroached upon.
- 3.4. Some lands of the Auroville Foundation are not utilised, underutilised, or not utilised in accordance with land use as envisaged in the Auroville Master Plan.

The Board is of the view that the following action needs to be taken in relation to Auroville Foundation land:

- 3.1. The land acquisition proposal for the remaining private lands in the City Area according to the Auroville Master Plan is ratified by the Board.
- 3.2. The Board also endorses the proposal to engage with the Tamil Nadu Government for the establishment of a New Town Development Authority (NTDA) for the Auroville Master Plan area.
- 3.3. The Board advises that stewardships of Auroville lands are changed periodically.
- 3.4. Appointment of experts (on contract basis) for land consolidation.
- 3.5. Prepare a land and building assets database with details of present and potential utilisation.
- 3.6. Optimise the utilisation of all land and building assets.

4. Economy

The Board noted the following in relation to the present status of the economy of Auroville:

- 4.1. The Mother had envisaged Auroville as a self-supporting township. Auroville is not yet self-supporting and is unable to meet the basic needs of all residents of Auroville.
- 4.2. It is not clear how many adult Aurovilians are contributing through work towards the realisation of the aims and objectives of Auroville.
- 4.3. Auroville's cost of living seems to be high.
- 4.4. Auroville is still a monetary transactional society.
- 4.5. There is no pan-Auroville annual budget.
- 4.6. There is no medium and long-term economy plan.
- 4.7. Human resources are not evaluated for their contribution to Auroville after the completion of the newcomer period.
- 4.8. There is a large number of trusts and units with multiple GST registrations and accounting systems.

The Board is of the view that the following action needs to be taken in relation to the economy of Auroville:

- 4.1. Preparation of an annual Auroville budget that includes all resources and all needs.
- 4.2. Preparation of a medium and long-term economy plan including financial plans of the income-generating units of Auroville.
- 4.3. Make capital available for the growth of existing income-generating units and start-up capital for new income-generating units.
- 4.4. Establish an innovation and incubation centre for the youth to be actively engaged.
- 4.5. Strengthen and support the knowledge economy.
- 4.6. All Auroville lands, buildings and other assets must be utilized to generate collective resources for Auroville as whole.
- 4.7. Use some of the outlying lands of Auroville for income generation through joint ventures or ventures in which Auroville has a passive stake.
- 4.8. Elimination of internal money exchange.
- 4.9. Ensure that all basic needs of all residents are met and that all residents contribute to the realisation of Auroville.
- 4.10. Enhance Auroville food production to meet the needs of Auroville.
- 4.11. Simplify the governance and organisation structures (trusts, units, activities and committees).
- 4.12. Integrated common accounting systems to be implemented for more effective and transparent financial management.
- 4.13. Contributions by income-generating units to be reviewed (rationale of the 33% contribution; utilisation of surpluses).
- 4.14. Reduce construction costs with innovative construction practices and effective and transparent price discovery mechanisms
- 4.15. The Mother envisaged Auroville as a self-supporting township. All Auroville residents are expected to contribute to achieving this goal and work for the collective welfare of Auroville.

5. Education and Research

The Board noted the following in relation to the present status of education and research in Auroville:

- 5.1. There is a mix of conventional education systems with the envisioned ideal of integral education with a dedicated team of teachers.
- 5.2. There seem to be under-utilised facilities.

The Board is of the view that the following action needs to be taken in relation to education and research in Auroville:

- 5.1. Establishment of various Centres of Excellence in Auroville.
- 5.2. Auroville to become a hub for integral education and research.
- 5.3. The Board noted that the establishment of the Sri Aurobindo International Multiversity as an affiliating network for integral education, research, teaching, training and extension is a good and appropriate initiative to be launched during the 150th birth anniversary of Sri Aurobindo.
- 5.4. The Centre for International Research on Human Unity (CIRHU) may be established as planned.
- 5.5. Auroville may engage with other institutions and organisations and conduct exchange programs, thereby sharing the experience and skills of Auroville with the world at large
- 5.6. Youth hubs and innovation labs may be established in the township.
- 5.7. The students of Auroville schools may be given a broader exposure to the philosophy, teachings and vision of Sri Aurobindo and the Mother.

6. Entry Process

The Board is of the view that the following action needs to be taken in relation to the entry of new residents into Auroville:

- 6.1. The entry process of Auroville should be more welcoming and the Auroville population should grow to 50,000 as envisaged while ensuring that newcomers understand, and subscribe to, the ideals of Auroville. A population of 15,000 by 2025 may be achieved.
- 6.2. There could be active engagement with Auroville International Centres and Sri Aurobindo Centres to facilitate the joining of volunteers and interns

while maintaining international diversity and commitment to the ideals of Auroville

- 6.3. The Board noted that the Mother had envisaged Auroville as an ideal town, and that when Auroville residents live by the ideals given by the Mother, Auroville will become a magnet that attracts people from all over the world, who also wish to contribute to the realization of the Auroville ideals.

7. Sri Aurobindo's 150th birth anniversary

- 7.1. The Board advised the Secretary AF, to pursue the proposals for events, programs and projects with Government of India and approved an initial budget for the programs, events and projects of Rs. 50 Crores.
- 7.2. The Board expresses a strong aspiration that the 150th birth anniversary of Sri Aurobindo may be the beginning of a new phase of accelerated development of the Auroville Township as the City for the Future, the Ideal Town and a Laboratory of Evolution as envisaged by the Mother.

8. Meetings of the Governing Board:

- 8.1. The Board decided to meet at least once in every quarter.
- 8.2. During these meetings the Board will review progress made with reference to work plans of the various Auroville working groups and the overall progress of Auroville's development.

9. Conclusive remarks

- 9.1. Chairman and the Board appreciated the presentations made by the Working Committee, FAMC, ATDC and SAIER.
- 9.2. The meeting concluded with a vote of thanks to the Chairman of the Board.

ANGSHUMAN BASU
ASSISTANT ACCOUNTS OFFICER



No.AF/G/4-A/172

17 September 2021

To
Mr. C. Jayakaran
 Kurinji Tours and Travel
 Hotel Hilltop Towers
 Kodaikanal – 624101
 Dindigul Dt, Tamil Nadu

Dear Sir,

Please refer to your application dated 12-08-2021 received on 17-08-2021, seeking information under RTI Act 2005. The information as follows:

1. Survey report of the flora and fauna conducted of the land proposed to be cleared for the Crown project?

Ans: As per the Auroville Foundation Office records, now such survey report is available in the records as on the date.

2. What is the number of species of trees and plants that will be cleared for laying down the Crown project?

Ans: As per the Auroville Foundation Office records no survey report is available. In absence thereof, no such information is available as on the date. Hence, the information sought for cannot be provided.

3. What is the number of species of Plants / Trees that belongs to TDEF which will be cut for the purposes of the Crown project?

Ans: Please refer to response to information at no.2.

4. What is the number plants / trees belonging to TDEF species which are more than 1 inch diameter at 1.5m off the ground which will be cut sown for the purposes of the Crown project? What is their canopy area?

Ans: Please refer to response to information at no.2.

5. What is the average age of the TDEF species that are within the area demarcated for clearing to build the Crown project?

Ans: Please refer to response to information at no.2.

Page 1 of 2

AUROVILLE FOUNDATION**To be continued...**

6. **What is the number of trees above the age of 10 years that will be cut down to lay down the Crown project?**

Ans: Please refer to response to information at no.2.

7. **How many acres of re-afforested land is being proposed to be cleared to lay down the Crown project?**

Ans: Please refer to response to information at no.2.

8. **Is there a violation of any legal statute / developmental rules if the re-afforested land that is marked to be cleared for the Crown project continue to exist 'as it is'?**

Ans: As per office records, there is no violation of any legal statute, development rules and no notice is received from any Statutory Authority for clearance of re-afforested land, marked for the purpose.

9. **Is there any legal mandate that the Crown project "should" go through the re-afforested land? If yes, kindly share the details?**

Ans: The Auroville Foundation has been mandated with the task of ensuring that the Auroville Township is developed in accordance with the Auroville Master Plan (please see section 17(e) of the Auroville Foundation Act). The Auroville Master Plan includes the Crown. Please see also our response to question 8.

Yours faithfully,



(Angshuman Basu)

ANGSHUMAN BASU
ASSISTANT ACCOUNTS OFFICER



No.AF/G/4-A/196

30 September 2021

To
Ms. Sarada Natarajan
 No. 307, Renaissance Woods I
 Jarakabande Forest Road
 Jalahalli West
Bengaluru – 560 015

Dear Madam,

Please refer to your application dated 07-09-2021 received on 13-09-2021, seeking information under RTI Act 2005. The information as follows:

1. Are there any Archaeological Heritage Sites and archaeologically sensitive / important areas that will be affected by the planned Crown project mentioned in *The Hindu* article of August 7 2021?

Ans: As the Survey Report, in respect of survey conducted for Crown Road, referred to in The Hindu Newspaper and relied by you is not available. In absence thereof, it is not possible to provide the information sought for.

2. If yes, when was the last excavation done?

Ans: Please refer to the reply to the query No. 1.

3. What was the list objects found deemed to be of archaeological importance?

Ans: Please refer to the reply to the query No. 1.

AUROVILLE FOUNDATION

To be continued...

Ans: Please refer to the reply to the query No. 1.

5. Can we be provided with photographs of all the archaeological objects excavated so far?

Ans: Please refer to the reply to the query No. 1.

6. Are permissions required from any authority before laying the Crown project through archaeological sites? If yes, from which authorities?

Ans: Please refer to the reply to the query No. 1.

7. Can we be provided a copy of the permission letter from the authorities?

Ans: Please refer to the reply to the query No. 1.

Yours faithfully,


(Angshuman Basu)



ANGSHUMAN BASU
ASSISTANT ACCOUNTS OFFICER

No.AF/G/4-A/ 171

17 September 2021

To
Mr. Joel Kumar
S/o. Mr C. Chandrakumar
No.: 1, Avudayarpuram,
Tuticorin, - 628002
Tamil Nadu

Dear Sir,

Please refer to your application dated 11-08-2021 received on 19-08-2021, seeking information under RTI Act 2005. The information as follows:

- 1. Detailed project plan of the Crown project, as mentioned in The Hindu article, with the locations of colonnades, plazas, cafes, cinema halls, exhibition galleries and art studios?**

Ans: As on the date, detailed project plan of the crown project is not available in the record of the Auroville Foundation Office. Hence, information sought for cannot be provided. However, as per Master Plan of Auroville, the Crown will take place as and when it is done.

- 2. Detailed plan of existing roads and buildings circling the Matrimandir?**

Ans: As per the Master Plan of Auroville, the Crown is described in the Auroville Universal Township Gazetted Master Plan as follows:

2.5.4. There is another special use zone, which traverses all the four zones in a concentric fashion with a width of about 75 meters, consisting of a circular road with buildings facing it. This is termed as the 'Crown Area'. This Crown Area will provide most of the service facilities required to support the activities in the four zones mentioned above. The developments in the Crown area will naturally be somewhat different, depending on its proximity or interface with each zone".

It may be seen from the above description that the Crown offers convenient connectivity for the Auroville residents of the township and access to township services.

- 3. What are the disadvantages of the present roads circling the Matrimandir to residents of Auroville and the general public?**

AUROVILLE FOUNDATION

To be continued...

Ans: No such information is available on the records of Auroville Foundation Office. Hence, information cannot be provided.

- 4. What will be the advantages of the Crown project to the residents of Auroville and the general public?**

Ans: As per the Master Plan of Auroville, the Crown is described in the Auroville Universal Township Gazetted Master Plan as follows:

2.5.4. There is another special use zone, which traverses all the four zones in a concentric fashion with a width of about 75 meters, consisting of a circular road with buildings facing it. This is termed as the 'Crown Area'. This Crown Area will provide most of the service facilities required to support the activities in the four zones mentioned above. The developments in the Crown area will naturally be somewhat different, depending on its proximity or interface with each zone".

It may be seen from the above description that the Crown offers convenient connectivity for the Auroville residents of the township and access to township services.

- 5. Will any Auroville building assets and community infrastructure be destroyed by the Crown project? If yes, how many, their present use, their financial value?**

Ans: Since any such report of Crown Project is not available with the Auroville Foundation Office, hence it is not possible to provide the information.

- 6. What is the amount of donated money that will be lost due to the destruction of such community buildings and infrastructure for the Crown project?**

Ans: Since any such report of Crown Project is not available with the Auroville Foundation Office, hence it is not possible to provide the information.

- 7. If building assets will be destroyed, how much will the donors be compensated and how much will present users be compensated? Please give exact figures?**

Ans: Since any such report of Crown Project is not available with the Auroville Foundation Office, hence it is not possible to provide the information.

No building whether permanent or semi-permanent or temporarily constructed out of funds provided by the Government of India will be either shifted or demolished.

Yours faithfully,



(Angshuman Basu)



ANGSHUMAN BASU
ASSISTANT ACCOUNTS OFFICER

No.AF/G/4-A/173

17 September 2021

To
Mr. S. Vijayar
12A, FF, Prithvi Block
PRSN Appartments
Opp. Fatima College
Madurai – 625018
Tamil Nadu.

Dear Sir,

Please refer to your application dated 11-08-2021 received on 17-08-2021, seeking information under RTI Act 2005. The information as follows:

- 1. Details of Patta/Chitta/Paramboke land that are in the hands of private owners and developers adjacent to the proposed Crown project/circular pathway?**

Ans: Auroville Foundation Office does not maintain records of ownership of land adjacent to Auroville Land, Land owned by Private Individuals, hence the information sought for cannot be provided.

- 2. Is there any private property owner or developer who will directly benefit from the establishment of the circular pathway around the Matrimandir (proposed Crown project)?**

Ans: Auroville Foundation Office does not maintain records of ownership of land by private individuals, hence the information sought for cannot be provided.

- 3. Names of the Aurovilians related to the above beneficiaries of the circular Crown project?**

Ans: Since, Auroville Foundation Office does not maintain records in respect of information sought for at S. No. 2, hence the information sought for cannot be provided.

- 4. Names of any residents of Auroville, employees of Auroville, and employees of the Auroville Foundation who will gain an individual monetary benefit from the laying of the circular pathway referred to as the Crown project?**

Ans: As per Auroville Foundation Office records neither Residents of Auroville nor employees of Auroville Foundation will gain any monetary benefit from laying of the circular pathway.

AUROVILLE FOUNDATION**To be continued...**

The Auroville Foundation does not maintains any records of employees of Auroville, hence it is not possible to provide any information.

5. **Names of any residents of Auroville, relatives of residents of Auroville, employees of Auroville, or employees of the Auroville Foundation who will make a monetary gain from land acquisition to complete the laying of the circular pathway around the Matrimandir?**

Ans: As per Auroville Foundation Office records, no land is proposed to be acquired either from residents of Auroville nor employees of Auroville Foundation. The Auroville Foundation does not maintain records of relatives of residents of Auroville or employees of Auroville. Hence, information in respect of such information cannot be provided.

6. **Names of any Aurovilians who own or jointly own any land adjacent to the Crown project?**

Ans: The Auroville Foundation maintains records of land owned by it. It does not maintain record of land not owned by it. Hence, it is not possible to provide the information sought for.

Yours faithfully,



(Angshuman Basu)

ANGSHUMAN BASU
ASSISTANT ACCOUNTS OFFICER



Auroville

No.AF/G/4-A/190

30 September 2021

To
Ms. Tara Braganza
 No. 201, Lakshmi Sai Apartments
 Gorantla Centre, Amravati Road
 Near New Apostolic Church
 Guntur - 522 034
 Ph. +91 99862 76837

Dear Madam,

Please refer to your application dated 23-08-2021 received on 31-08-2021, seeking information under RTI Act 2005. The information as follows:

1. **Are there any water conservation structures / measures, canyons, odais, watersheds, water catchment areas, and any other important areas for water conservation, that will be destroyed due to the construction of the Crown project? If yes, how many of them?**

Ans: Survey Report, in respect of survey conducted for Crown road, referred to in The Hindu Newspaper and relied by you is not available. In absence thereof, it is not possible to provide the information sought for.

2. **Survey of the hunds, watersheds, water catchment areas, canyons, odais and any other details related to water conservation that will be impacted by the construction of the Crown project?**

Ans: Please refer to reply to query at S. No. 1.

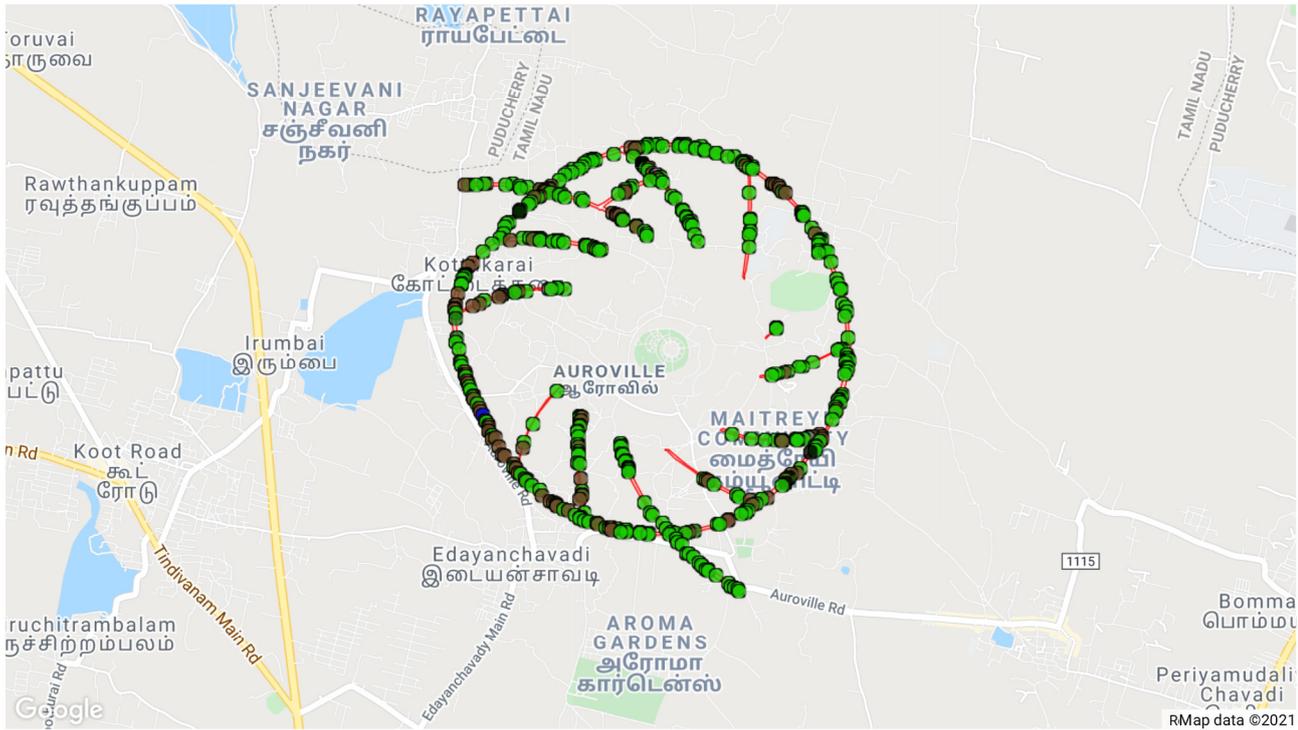
Yours faithfully,


 (Angshuman Basu)

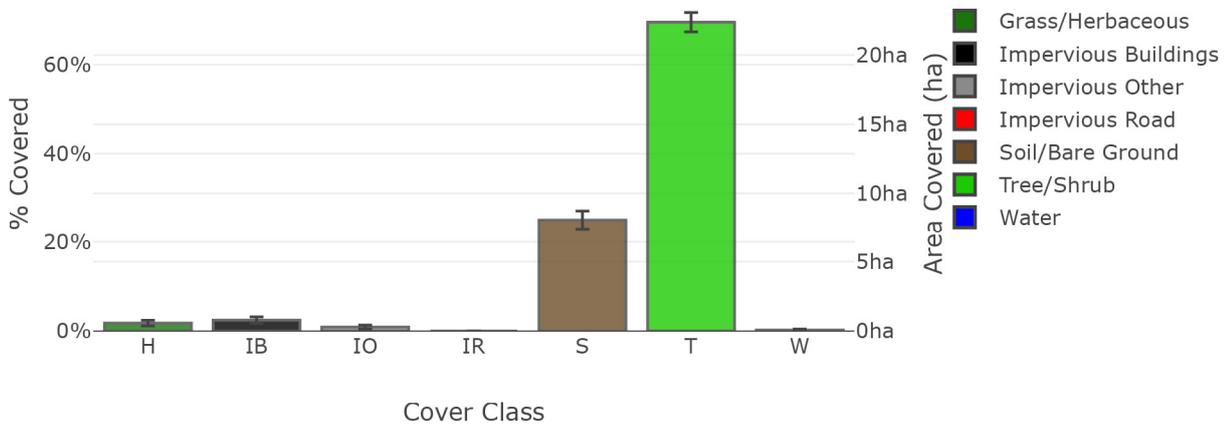
i-Tree Canopy v7.1

Cover Assessment and Tree Benefits Report

Estimated using random sampling statistics on 12/11/2021



Land Cover



Abbr.	Cover Class	Description	Points	% Cover ± SE	Area (ha) ± SE
H	Grass/Herbaceous		8	1.78 ± 0.63	0.57 ± 0.20
IB	Impervious Buildings		11	2.44 ± 0.73	0.79 ± 0.23
IO	Impervious Other		4	0.89 ± 0.44	0.29 ± 0.14
IR	Impervious Road		0	0.00 ± 0.00	0.00 ± 0.00
S	Soil/Bare Ground		113	25.11 ± 2.04	8.08 ± 0.66
T	Tree/Shrub		313	69.56 ± 2.17	22.37 ± 0.70
W	Water		1	0.22 ± 0.22	0.07 ± 0.07
Total			450	100.00	32.16

Tree Benefit Estimates: Carbon (Metric units)

Description	Carbon (t)	±SE	CO ₂ Equiv. (t)	±SE	Value (INR)	±SE
Sequestered annually in trees	68.46	±2.13	251.01	±7.83	974,466 Rs	±30,391
Stored in trees (Note: this benefit is not an annual rate)	1,719.19	±53.62	6,303.70	±196.60	24,472,486 Rs	±763,238

Currency is in INR and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Amount sequestered is based on 3.060 t of Carbon, or 11.220 t of CO₂, per ha/yr and rounded. Amount stored is based on 76.848 t of Carbon, or 281.776 t of CO₂, per ha and rounded. Value (INR) is based on 14,234.89 Rs/t of Carbon, or 3,882.24 Rs/t of CO₂ and rounded. (Metric units: t = tonnes, metric tons, ha = hectares)

Tree Benefit Estimates: Air Pollution (Metric units)

Abbr.	Description	Amount (kg)	±SE	Value (INR)	±SE
CO	Carbon Monoxide removed annually	22.61	±0.71	161 Rs	±5
NO ₂	Nitrogen Dioxide removed annually	123.29	±3.84	276 Rs	±9
O ₃	Ozone removed annually	1,227.87	±38.29	14,395 Rs	±449
SO ₂	Sulfur Dioxide removed annually	77.69	±2.42	48 Rs	±2
PM _{2.5}	Particulate Matter less than 2.5 microns removed annually	59.66	±1.86	29,758 Rs	±928
PM ₁₀ *	Particulate Matter greater than 2.5 microns and less than 10 microns removed annually	411.29	±12.83	10,451 Rs	±326
Total		1,922.42	±59.96	55,089 Rs	±1,718

Currency is in INR and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Air Pollution Estimates are based on these values in kg/ha/yr @ Rs/kg/yr and rounded:

CO 1.011 @ 7.10 Rs | NO₂ 5.511 @ 2.24 Rs | O₃ 54.886 @ 11.72 Rs | SO₂ 3.473 @ 0.62 Rs | PM_{2.5} 2.667 @ 498.75 Rs | PM₁₀* 18.385 @ 25.41 Rs (Metric units: kg = kilograms, ha = hectares)

Tree Benefit Estimates: Hydrological (Metric units)

Abbr.	Benefit	Amount (l)	±SE	Value (INR)	±SE
AVRO	Avoided Runoff	108.21	±3.37	19 Rs	±1
E	Evaporation	8,934.09	±278.63	N/A	N/A
I	Interception	8,984.08	±280.19	N/A	N/A
T	Transpiration	12,089.20	±377.03	N/A	N/A
PE	Potential Evaporation	67,697.49	±2,111.32	N/A	N/A
PET	Potential Evapotranspiration	55,235.49	±1,722.66	N/A	N/A

Currency is in INR and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Hydrological Estimates are based on these values in l/ha/yr @ Rs/l/yr and rounded:

AVRO 4.837 @ 0.18 Rs | E 399.355 @ N/A | I 401.590 @ N/A | T 540.389 @ N/A | PE 3,026.089 @ N/A | PET 2,469.035 @ N/A (Metric units: l = liters, ha = hectares)

About i-Tree Canopy

The concept and prototype of this program were developed by David J. Nowak, Jeffery T. Walton, and Eric J. Greenfield (USDA Forest Service). The current version of this program was developed and adapted to i-Tree by David Ellingsworth, Mike Binkley, and Scott Maco (The Davey Tree Expert Company)

Limitations of i-Tree Canopy

The accuracy of the analysis depends upon the ability of the user to correctly classify each point into its correct class. As the number of points increase, the precision of the estimate will increase as the standard error of the estimate will decrease. If too few points are classified, the standard error will be too high to have any real certainty of the estimate.

Notes

The report is from here: [i-Tree Canopy](#) which has been developed by the USDA (Forest Service) and is supported by the International Society of Arboriculture, The Woodland Trust (UK), The Society of Municipal Arborists (US) and several well reputed commercial entities. Similar studies have been conducted around the world such as for New York and London.

i-Tree is a combination of science and free tools that:

- Quantifies the benefits and values of trees around the world.
- Aids in tree and forest management and advocacy.
- Shows potential risks to tree and forest health.
- Is based on peer-reviewed, USDA Forest Service Research.

i-Tree results can be somewhat sensitive user skills e.g., to classify points and the quality of the satellite image used. Some degree of generalization is built in the software, but technical precision can increase with more specific database. Therefore, despite any limitations, the use of i-Tree software has shown promising results in estimating the value and the benefits generated by ecosystem services. (Olivatto et al., 2019).

Notes on Carbon sequestration values in India:

The soil organic carbon concentration is 15 to 20g/kg in uncultivated soil as opposed to 5g/kg in agriculture area in India. The figure is likely to be much lower for areas with substantial concrete cover/paving. The potential of soil C sequestration is estimated to be 7 to 10 Tg C/y for restoration of degraded soils and ecosystems. The total potential of soil C sequestration for different land uses including measures of erosion control etc. comes to 39 to 49 (44± 5) Tg C/y. (Lal, 2004).

India's commitment to urban forest

World Health Organization (WHO) has the evidence of substantial health and wellbeing that urban forests brings. A detailed study conducted for 44 cities across all seasons over several years (2001-2017) a trend of increasing temperature in cities compared to other areas - which may result in health issues. In recognition of all the benefits and in commitment to create and manage green areas in the cities, The Union Minister of Environment, Forest and Climate Change recently announced plans to build 200 urban forests in India.

Lal, R. Soil Carbon Sequestration in India. *Climatic Change* 65, 277-296 (2004). <https://doi.org/10.1023/B:CLIM.0000038202.46720.37>

Olivatto T.F. (2019) Using i-Tree Canopy to Estimate and Value Ecosystem Services of Air Pollutant Removal. In: Iano Y., Arthur R., Saotome O., Vieira Estrela V., Loschi H. (eds) *Proceedings of the 3rd Brazilian Technology Symposium. BTSym 2017*. Springer, Cham. https://doi.org/10.1007/978-3-319-93112-8_30

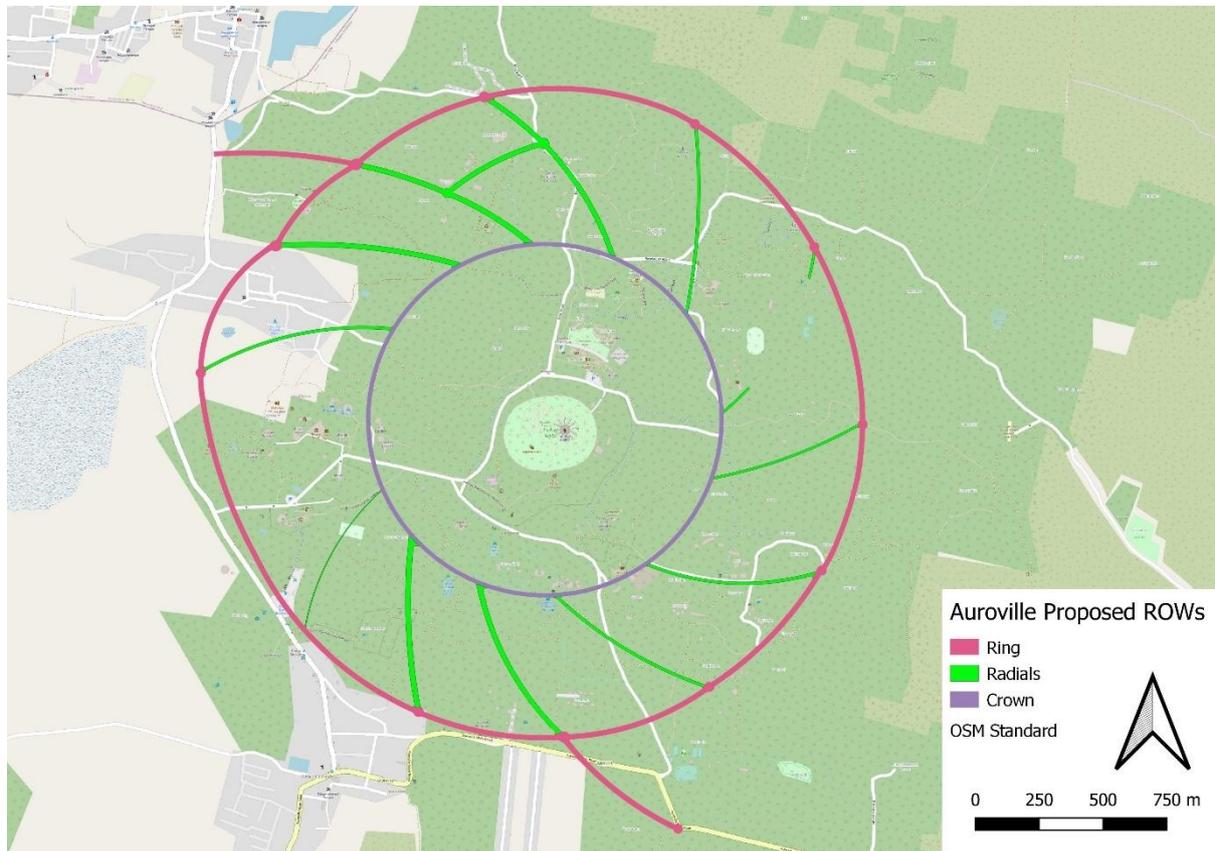
Raibagi, K, 2020, Why Indian cities should adopt tech to grow urban forests, Opinion: Analytics India Magazine, <https://analyticsindiamag.com/why-indian-cities-should-adopt-tech-to-grow-urban-forests/>

Arboricultural report Auroville Proposed ROWs

Project: Clearing of Right of Ways (ROWs) for the Crown, Radials and Ring implementation project, Auroville

Date: Dec 2021

Location: Auroville, Tamil Nadu, India 605101



Compiled and Reviewed By: Island Lescure

Contributors and Surveyors: A. Sivasankaran, P.Jayakrishnan, Auro Ancolie Stoll, Noe Van Alphen, Glenn Baldwin, Jonas Suchanek

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Introduction

Purpose of the Report:

- To quantify the tree cover present and destroyed within the proposed ROW to aid in making decisions about the project.
- To highlight alternatives that have been proposed

Proposed development: To clear all ROWs in order to implement the Crown project which is to be followed with clearing the ROWs of the Radials and the Ring in Auroville as proposed in the Auroville Master Plan (Perspective 2025). (Ref visual above)

Requirements: ROW for the Crown is 16.7 meters. Radial ROWs vary from 4 meters to 20 meters. Ring ROW is 21 meters. All these areas are proposed to be cleared of all existing vegetation.

Limitations: Due to the short notice for the work required, a minimum of information deemed necessary was compiled in the time frame given. Accuracy in all areas has been sought but any errors should be seen in that light.

A project with this sort of impact should only be implemented after appropriate tree surveys and impact assessments have been carried out and the manner of least impact at least considered.

Table 1: Summary of Findings

Already Destroyed trees		
	Number of Trees	Number of Species
Crown ROW	898 (includes some understory) = 712 (Darkali) + 186 (YC)	44
Ring and Radial ROWs	0	0
Destroyed trees if alternatives had been employed (only for stated areas)		
Youth Centre/Bliss (Crown ROW)	48	20
Darkali (Crown ROW)	88	22
Existing trees that would be destroyed following current proposal		
Crown ROW	4,586 (includes some understory)	129
Ring and Radial ROWs (estimate using i-Tree, see appendix "i-Tree study")	1,54,414 = 5,268 (trees and shrubs ~>12cm) + 149,146 (understory - trees and shrubs ~<12cm diameter stem) (considering 69.56% canopy cover)	Not surveyed

Integration of vegetation and alternatives proposed have been found to have significant merit in comparison to original proposal.

In many areas in the Youth Centre and Bliss Forest area, ground markers were not followed by the JCBs or damage was done farther out than the ROW and all trees that had been planted as avenue trees (which were mature) within the original Crown area have been removed.

There is no integration of vegetation in the proposed project. All assets are wasted. It is financially and ecologically more viable to integrate vegetation in development plans, compared to replanting everything as mature specimens provide significantly more benefits than newly planted trees. (Doick et al., 2018)

Cities containing urban forests and green infrastructure have been found to have significantly improved living conditions in comparison to cities with little or no [urban forest strategies](#).

The trees both destroyed and potentially affected are mainly species that have been classed under the Tropical Dry Evergreen Forest type and more specifically as the East Deccan Dry Evergreen Forests with the status: Critical/Endangered according to the [World Wildlife Foundation](#). Several species are also registered on the [IUCN list](#) and [CITES](#) under this status. Many are simply not recorded yet. (Everard, 2018)

Table 2: Conservation Status of Trees along Crown ROW

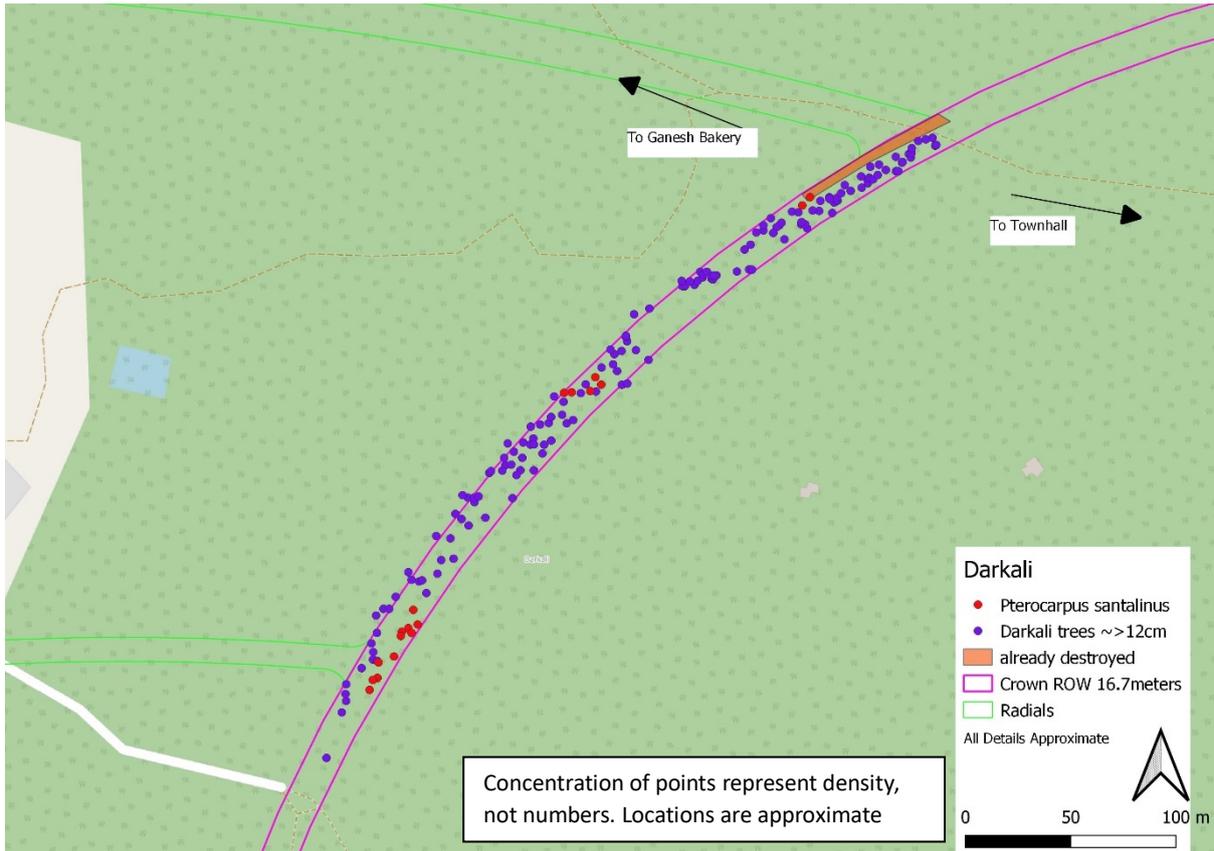
Conservation Status of trees found along Crown ROW (not counting understory)		
	Total species	Total amount
IUCN status		
* = not evaluated (no status)	86	411
DD = Data Deficient	2	39
LC = Least concern	34	323
NT = Near threatened	2	2
VU = Vulnerable	3	47
EN = Endangered	2	59
CR = Critically endangered	0	0
Total	129	881
CITES status: Appendix II	4	78
Trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882	5	81

Sections

Due to the limitations stated above, the report has been split into three sections as such:

1. Darkali ROW (higher detail)
2. Crown ROW (YouthCentre/Bliss, Savithri Bhavan to Solar Kitchen, Gaia) (moderate detail)
3. Radials and Ring ROW (estimates)

Darkali ROW



Description:

This area is owned by the Auroville Foundation. It has been managed as a park, forest and water management area (due to factors within the watershed). It falls within the proposed Crown area. All details are in Appendix “Darkali”. The Crown would be ~440 meters long in this area.

Data collection method:

For destroyed trees: neighbouring area vegetation was used to estimate what was previously there with a sample representation and with input from local steward per 16 SQM.

For existing trees: Onsite collection with Garmin etrex 20x to identify and plot individual trees of 12cm diameter (at 1.5 meters) and above. Smaller trees and shrubs were not plotted but were estimated based on an average from collected sample data (as for area destroyed).

Findings:

Original proposal:

Table 3: DARKALI: Already Destroyed Trees & Trees under threat

Already Destroyed trees				
Location	Total number	Total number of species	Total number of trees that fall under The Scheduled Timber Forest Act, 1882	Species that fall under The Scheduled Timber Forest Act, 1882
Darkali	712 (includes understory)	19	2	<i>Pterocarpus santalinus</i>

Existing, but under threat				
Location	Total number	Total number of species	Total number of trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882	Species that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882
Darkali	4,159 = 3,967 (understory) (majority <7cm stem diameter) + 192 (~>7cm dbh)	44	28	<i>Pterocarpus santalinus</i>

Alternatives that have been proposed:

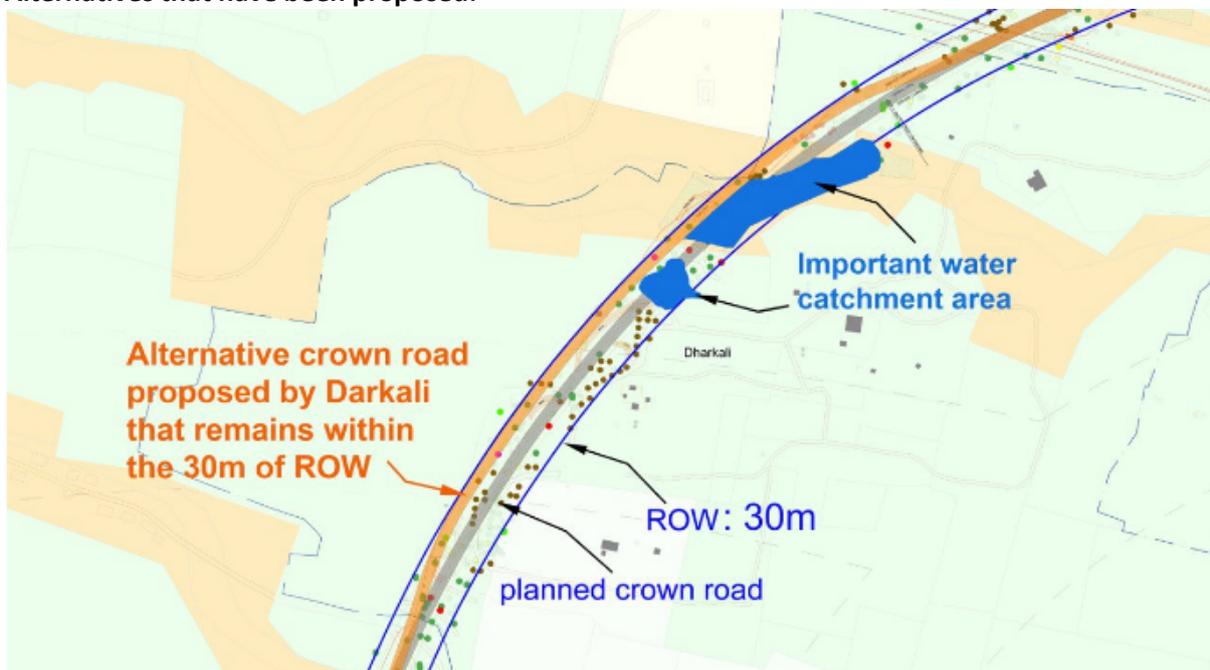


Table 4: DARKALI: Trees that would have been destroyed with alternate proposal

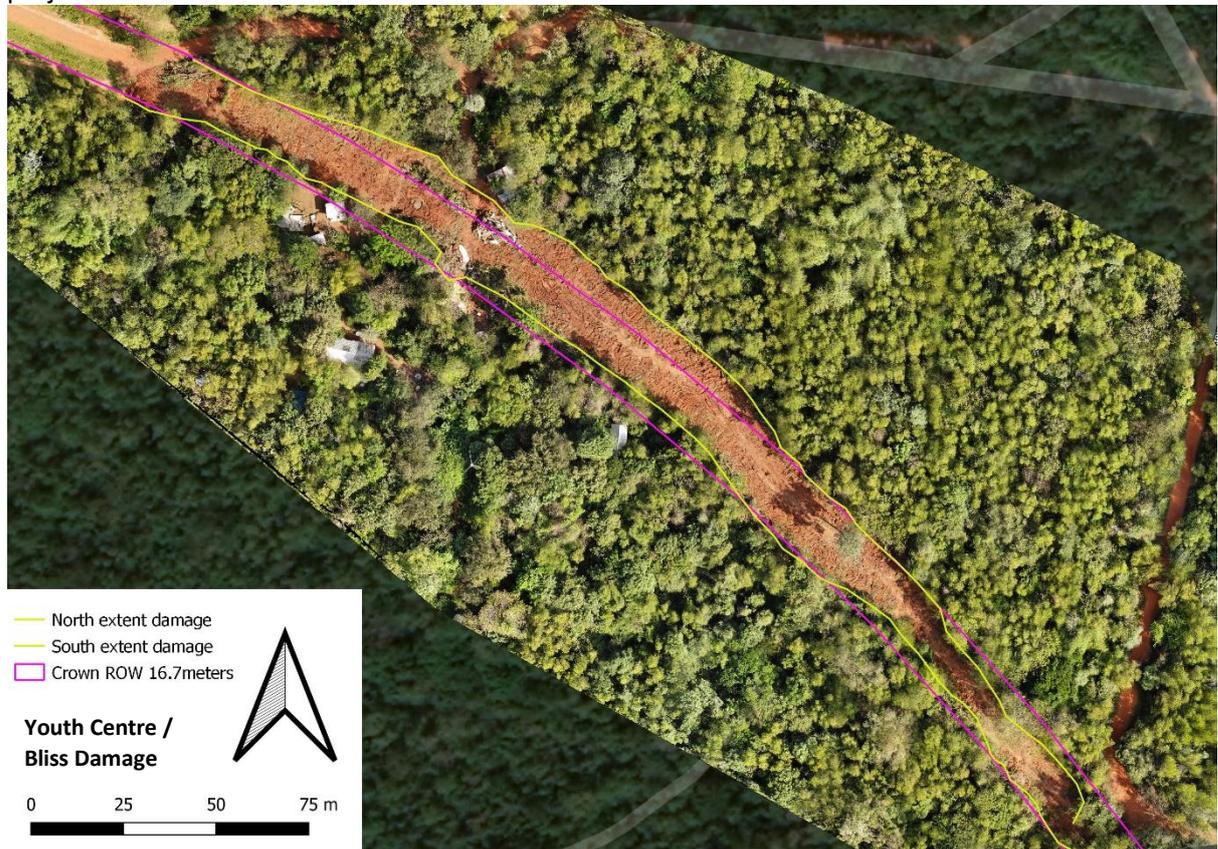
Destroyed trees if alternative had been employed (full section)		
Area	Number of Trees	Number of Species
Darkali	88 (~>5cm dbh) (negligible understory)	22, many common species

Crown ROW (YouthCentre/Bliss, Savithri Bhavan to Solar Kitchen, Gaia Area)

All details are in Appendix corresponding to area

Description:

This section goes through privately owned land, Temple owned land and Auroville Foundation property. Some areas bear vegetation and others not. Apart from the Darkali section (above) there is also an area with high density of tree cover between the road near Savithri Bhavan and the Solar Kitchen. The Bliss forest area previously contained trees but these were destroyed due to this project.

**Data collection method:**

For destroyed trees: The data within the area within the YC and Bliss forest was extrapolated from the survey of the trees prior to their destruction.

For existing trees: The data from the rest of the areas (excluding Darkali) was collected from site visits. Species and DBH (approximate) were collected. Any species falling under the Scheduled Timber vide Tamil Nadu Forest Act, 1882 were plotted using a Garmin etrex 20x.

Table 5: YOUTH CENTER (YC): Already Destroyed Trees

Already Destroyed trees				
Location	Total amount	Total number of species	Total number of trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882	Species that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882
Youth Centre and Bliss	186 (understory not calculated)	43	7	<i>Diospyros ebenum</i>

Alternative that was proposed:

Crown concept - Bliss and YC (collaboration between Bliss Stewards, Youth Centre, AV Botanical Gardens, ATDC and several other people)

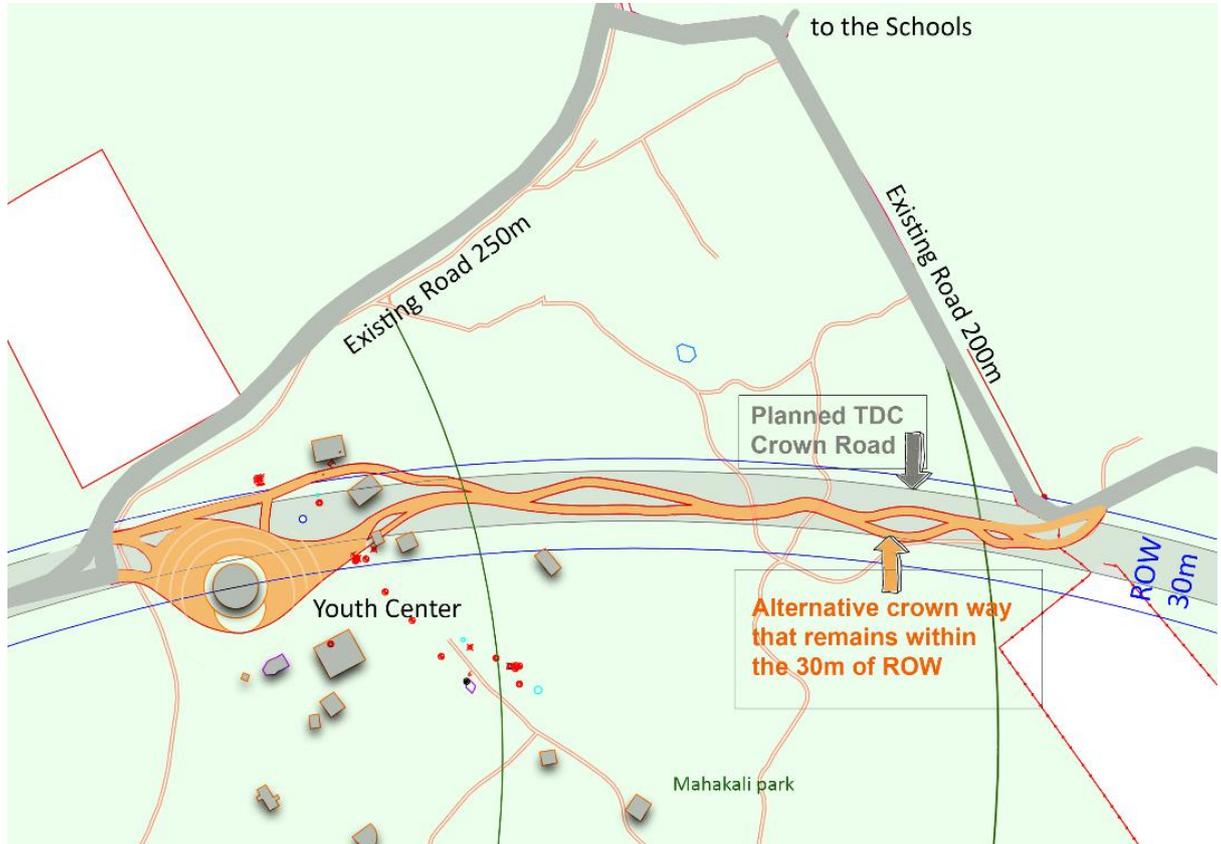
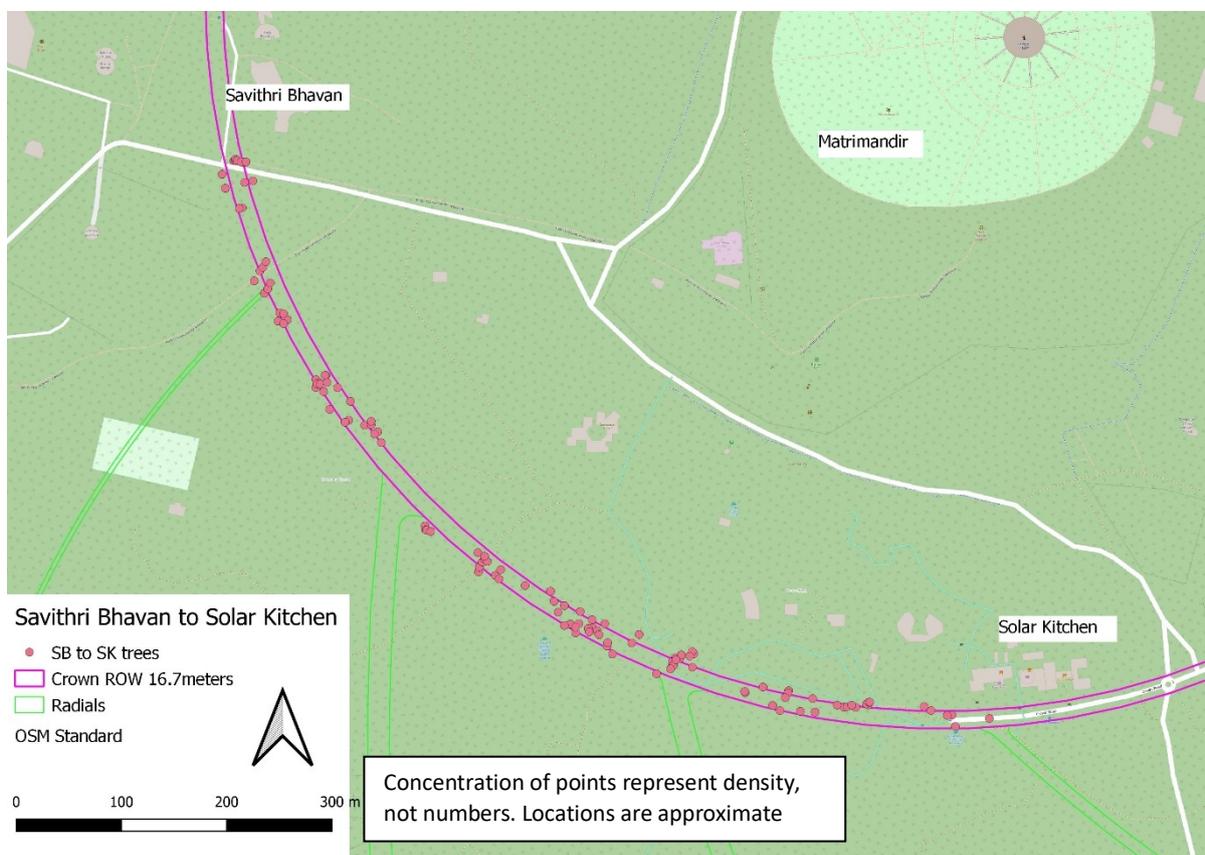


Table 6: YOUTH CENTER (YC): Trees that would have been destroyed with alternate proposal

Destroyed trees if alternative had been employed		
	Number of Trees	Number of Species
Youth Centre/Bliss	48	20

Table 7: OTHER AREAS OF THE CROWN ROW: Trees under threat

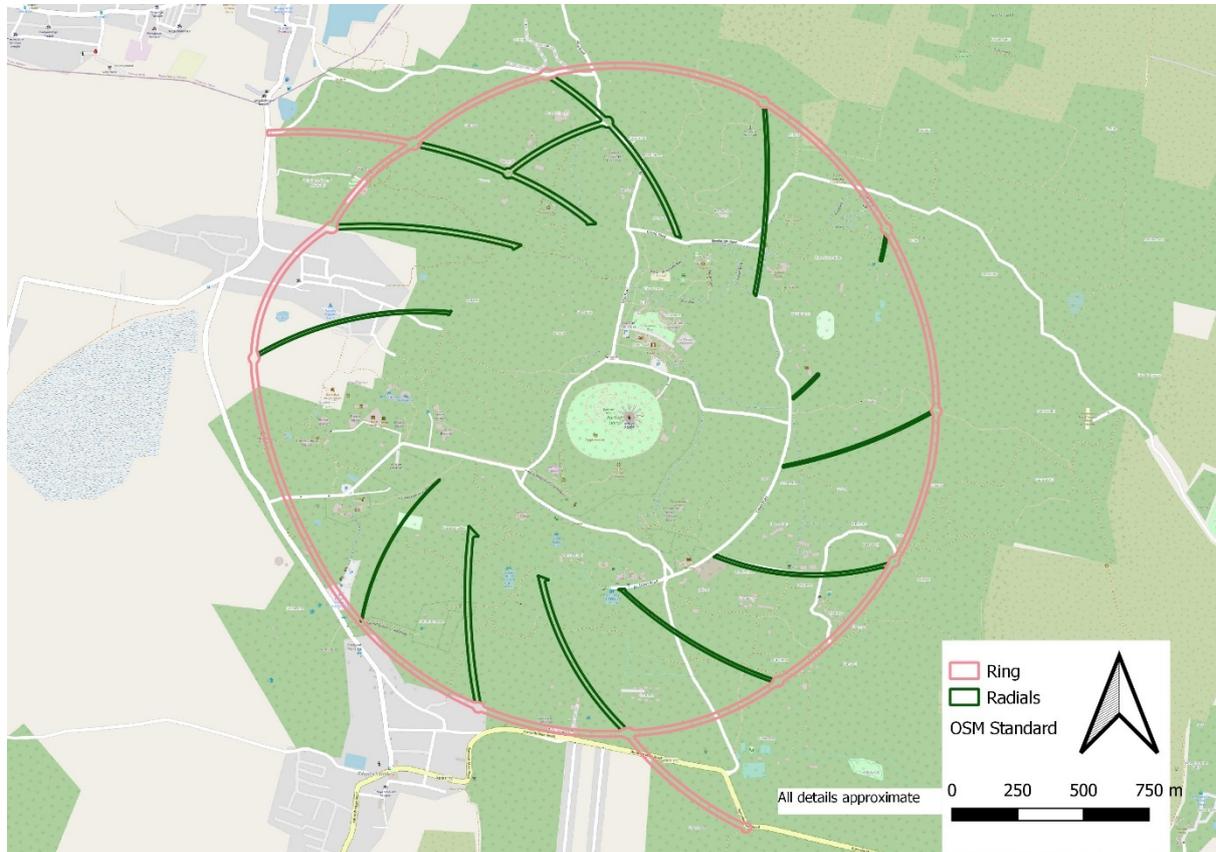
Existing trees, but under threat				
Location	Total amount	Total number of species	Total number of trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882	Species that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882
Savithri Bhavan to Solar Kitchen	276 (understory not calculated)	63	5	<i>Diospyros ebenum</i> , <i>Pterocarpus santalinus</i> , <i>Tectona grandis</i>



Existing trees, but under threat				
Location	Total amount	Total number of species	Total number of trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882	Species that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882
Gaia Area	151 (understory not calculated)	46	21	<i>Diospyros ebenum</i> <i>Diospyros ferrea</i>



Radials and Ring ROW



Description:

This section goes through privately owned land, Temple owned land and Auroville Foundation property. Some areas bear vegetation and others not. There are numerous areas with high density tree cover such as in Revelation, Gaia, Anusuya, Aurodam Samridhi, Meadow, Baraka (not exhaustive).

Notes:

As the exact location of the Radials and the Ring ROWs is undefined, a geographic information system using an internationally recognized standard ([i-Tree](#)) was employed to give tree and shrub canopy cover.

Findings:

The area within the Radials and the Ring ROWs consists of 69.56% ± 2.17% canopy cover.

Table 8: RADIALS AND RING ROW: Trees under threat

Existing, but under threat				
Location	Total number	Total number of species	Total number of trees that fall under The Scheduled Tamil Nadu Forest Act, 1882	Species that may be present that fall under The Scheduled Timber

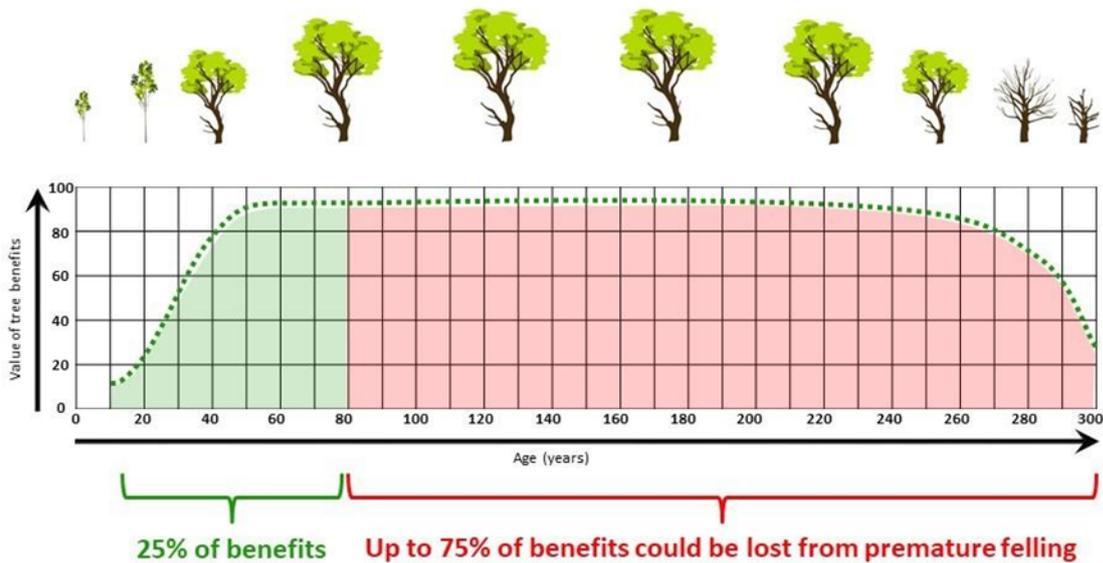
				vide Tamil Nadu Forest Act, 1882
Ring and Radial ROWs	1,54,414 = 5,268 (trees and shrubs ~>12cm) + 149,146 (understory - trees and shrubs ~<12cm diameter stem) (considering 69.56% canopy cover)	Not surveyed	Not surveyed	<i>Black wood.</i> <i>Red Sanders.</i> <i>Rosewood.</i> <i>Sandalwood.</i> <i>Teakwood.</i>

Other Considerations:

Integrating existing vegetation in planning is considered a basic standard in contemporary planning. There is none of this in consideration in any aspect of the current project.

Replanting to offset tree loss:

The benefits that trees provide exponentially increase with size and maturity irrespective of whether they are in a woodlot or along the road. Therefore, in the short term, the idea of planting new trees to replace the loss of older trees cannot be justified. The image below provides a simple visual representation. Note that even dead or dying trees, provide important niche habitats to flora and fauna in a woodlot.



Conceptualisation of the current annual benefit delivery from street trees. Photo courtesy of Jeremy Barrel (Barrell Tree Consultancy, UK)

Appendix

Totals of species found on the Crown ROW

Tamil Name	Local Name	Scientific name	Amount	IUCN Status	CITES Status	Trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882
Pencil Maram	Work Tree	Acacia auriculiformis	66	LC		
	White Bark	Acacia	1			
Vel Velan	Acacia	leucophloea		-	-	
	Balck Thorn	Acacia				
	Acacia	mellifera	1	-	-	
Ani kundamani	Red Bead Tree	Adenanthera pavonina	1	LC	-	
		Aegle				
Vlivam	Bael Fruit	marmelos	1	NT	-	
		Aglaia	1			
Sokkala	?	elaeagnoidea		LC	-	
	Tree of	Ailanthus				
Perumaram	Heaven	excelsa	1	-		
		Alangium				
Azhinjil	?	salvifolium	3	-	-	
	Lebbek					
Vaagai	tree	Albizia lebeck	5	LC	-	
	Indian	Allophylus	1			
Siruvalli	Allophylus	cobbe		-	-	
	Custard	Annona				
Seetha Maram	Apple	cherimola	4	LC	-	
	Blackcurran	Antidesma				
Pulicha Maram	t Tree	ghaesambillia	5	-	-	
	Christmas	Araucaria				
	Tree	columnaris	2	LC		
	Cluster	Areca				
	palm	lutescens	1	-	-	
Kaattu	Kaattu	Atalantia				
Elumitchai	Elumitchai	monophylla	27	-	-	
	Hill Wild	Atalantia				
Ran Limbu	Lemon	racemosa	1	-	-	
		Azadirachta				
Vembu	Neem Tree	indica	84	LC	-	
	Green	Bambusa				
Moongil	Bamboo	vulgaris	2	-	-	
		Benkara				
Sirukarai		malabarica	16	-	-	
	Purple	Bignonia				
	bignonia	magnifica	2	-	-	-
		Borassus				
Panai	Palmyra	flabellifer	21	EN	-	

Tamil Name	Local Name	Scientific name	Amount	IUCN Status	CITES Status	Trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882
Mul Vengai	Spinous Kino Tree	Bridelia retusa	82	LC	-	
Porasu	Flame of the Forest	Butea monosperma	3	LC	-	
Konavel	Divi Divi	Caesalpinia coriaria	14	-		
Irul	Brazilian Ironwood	Caesalpinia ferrea	1	LC		
Kaattu		Capparis brevispina	1	-		
Aadhandai	Spreading Capper	Capparis divericata	1	-		
Kurangu	Philipine	Carmona	1			
Vettilai	Tea Tree	retusa		-		
Sarakkondrai	Indian Laburnum	Cassia fistula	10	LC		
Vakai?	Ceylon Senna	Cassia roxburghii	3	-		
Manjal	Siamese					
Kondrai	Senna	Cassia siamea	42	LC		
Kanneer						
Maram	Ceylon Tea Mountain	Cassine glauca	1	-		
	Pomegrana	Catanaregum spinosa	1			
Madhukkarai	te			-		
	White Silk					
Shalmali	Cotton Tree	Ceiba pentandra	2	LC		
Sorkili		Chionanthus zeylanicus	2	-		
Ven Porasu	Satin Wood	Chloroxylon swietenia	6	VU		
Periyaelumichai						
	Lemon	Citrus limon	1	LC		
	Tree	Citrus sp.	2	LC		
Kaattu	Wild Curry	Clausena dentata	2	-		
Karuveppilai	Tree	Cleisanthus collinus	2	-		
Oduvan						
Kongilavam,	Yellow Silk					
Thanukku	Cotton	Cochlospermum religiosum	1	-		
Maram	Tree					
Mookkusalippazham	Indian	Cordia domestica	1	-		
	Cherry					
	Indian	Dalbergia	1			
Thodagathi	Rosewood	latifolia		VU	Appendix II	Forest Department

Tamil Name	Local Name	Scientific name	Amount	IUCN Status	CITES Status	Trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882
Erigai		Dalbergia paniculata	15	-		
Mayil kondrai	Peacock Tree	Delonix regia	3	LC		
Thirani	Kanara Derris	Derris ovalifolia	1	-		
Vidatheri	Sickel Bush	Dichrostachys cinerea	2	LC		
Malaikkulukki		Dimorphocalyx glabellus	6	-		
Karungaali	Ebony	Diospyros ebenum	34	DD	Appendix II	Forest department
Irumbili	Ironwood	Diospyros ferrea	6	-	Appendix II	Forest department
Karundhuvalisu	Bombay Ebony	Diospyros montana	1	-		
Kadalathi	Medhshingi	Dolichandrone falcata	2	-		
Veerai		Drypetes sepiaria	2	-		
Aadali		Ehretia pubescens	9	-		
	Tasmanian Blue Gum	Eucalyptus globulus	6	-		
Kaya	Roxburgh's Cherry	Eugenia bracteata	1	-		
Aala maram	Banyan Tree	Ficus benghalensis	7	-		
Sitralam	Laurel Fig	Ficus microcarpa	2	LC		
Arasa Maram	Peepal Tree	Ficus religiosa	4	-		
Malam Paruthi	Scarlet Sterculia	Firmiana colorata	1	-		
Sothaikkala	Governor's Plum	Flacourtia indica	2	LC		
Vellaipoola	Spinous fluggea	Fluggea leucopyrus	1	LC		
Kaattuppinnai	Mangosteen	Garcinia spicata	1	-		
Kambali Pisin	Brilliant Gardenia	Gardenia resinifera	5	-		
Konji	Orange Berry	Glycosmis mauritiana	5	LC		
Nilakkumala	Asian Bushbeech	Gmelina asiatica	1	LC		
Kattanam	White teak	Gmelina arborea	1	-		

Tamil Name	Local Name	Scientific name	Amount	IUCN Status	CITES Status	Trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882	
Kalunnu		Grewia hirsuta	1	-			
		Grewia rhamnifolia	2	-			
Aacha	Indian Blackwood	Haplophragma adenophyllum	1	-			
		Hardwickia binnata	6	-			
Aavimaram	Indian Elm	Holoptelia integrifolia	3	-			
Koran	Torch Tree	Ixora arborea	4	-			
Koran	Torch Tree	Ixora pavetta	5	-			
Oosi Malligai	Forest Jasmine	Jasminum angustifolia	1	-			
		Jasminum cuspidatum	1	-			
		African mahagony	Khaya senegalensis	41	VU		
Odiyan	Indian Ash tree	Lannea coromandelica	17	LC			
Gugamathi		Lepisanthes tetraphylla	8	LC			
Soundal	Wild Tamarind	Leucaena leucocephala	1	-			
		Madhuca	3				
Kaattu	Indian Mahua	longifolia					
Yeluppai		Mangifera indica	5	DD			
		Ceylon Iron wood	Manilkara hexandra	5	-		
Sappotta		Manilkara zapota	1	LC			
		Memecylon umbellatum	13	-			
Kaasan	Ironwood	Miliusa eriocarpa	3	-			
		India Cork Tree	Millingtonia hortensis	3	-		
			Mimusops elengi	9	LC		
Maramalligai	Bulletwood Forest	Mitragyna parvifolia	11	-			
		Kadamba	Morinda coreia	15	-		
Mannanunai		Morinda tinctoria	14	-			

Tamil Name	Local Name	Scientific name	Amount	IUCN Status	CITES Status	Trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882
Kattu Karuveppilai	Queen of the night	Murraya paniculata	8	-		
		Ochna kirkii	2	LC		
Silandi	Golden Champak	Ochna obtusata	2	-		
Kattu Naarathal	Wild orange	Pamburus missionis	9	-		
Perungondrai	Copperpod	Peltophorum pterocarpum	45	-		
Siru Echan	Date Palm (Bush)	Phoenix pusilla	2	-		
Pericham	Date Palm (tree)	Phoenix sylvestris	1	-		
Thoppu Nelli	Amla	Phyllanthus emblica	1	-		
Sirupiyari		Pleurostyliia opposita	6	-		
	White Frangipani	Plumeria alba	1	-		
Sirunetti		Polyalthia korinti	1	-		
Kaattu Netti		Polyalthia suberosa	1	-		
Pungan	Indian Beech	Pongamia pinnata	9	LC		
		Pterocarpus indica	1	-		
Vengai	Indian Kino Tree	Pterocarpus marsupium	1	NT		
Sandhana Vengai	Red Sandalwood	Pterocarpus santalinus	38	EN	Appendix II	Forest Department
Vennangu	Maple leaf Bayur Tree	Pterospermum acerifolium	1	LC		
Vennangai		Pterospermum suberifolium	12	-		
Masappoondi	Tada	Pterospermum xylocarpum	1	-		
Puthirajeevi	Nepalese Fire Thorn	Putranjiva roxburghi	5	LC		
		Reissantia indica	1	*		
Kokki Mullu	Cat Thorn	Scutia myrtina	1	LC		
Seran Kottai	Dhobi Nut Tree	Semecarpus anacardium	2	LC		

Tamil Name	Local Name	Scientific name	Amount	IUCN Status	CITES Status	Trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882
Aavarai	Tanner's Cassia	Senna auriculata	1	-		
Manjal	Siamese					
Kondrai	Senna	Senna siamea	9	LC		
Manjal konrai		Senna spectabilis	6	LC		
Pooppadiri	Yellow Snake Tree	Stereospermum personatum	2	-		
		Suregada angustifolia	2	-		
	Caribbean Trumpet	Tabebuia argentea	7	-		
Puliyan	Tamarind	Tamarindus indica	7	LC		
Tharani	Asiatic Tarenna	Tarenna asiatica	4	-		
Thekku	Teak	Tectona grandis	3	-		Forest Department
Marudha		Terminalia				
Maram	Arjun Tree	Terminalia arjuna	18	-		
Thandrikkai	Beach Almond	Terminalia bellerica	1	-		
Arali	Yellow Oleander	Thevetia peruviana	1	-		
Pachai		Tricalysia				
Nazhuvai		sphaerocarpa	18	-		
Neer Nochil	White Chaste Tree	Vitex leucoxydon	2	LC		
Valsura		Walsura trifoliata	33	-		

Darkali

Data collection:

Destroyed numbers:

Pterocarpus santalinus 4.8 cm dbh

Pterocarpus santalinus 6.4 cm dbh

Calculation for number of trees removed thus far:

Sample representation Per 16 SQM

15 Sapling (less than 3cm dbh)

3 Small (>3-7cm dbh)

1 Medium (>7-12cm dbh)

Cleared width (4 measurements taken) = 7.5 m average

Length of cleared area = 80m

Total area cleared by jcb is $80\text{m} * 7.5\text{m} = 600\text{ sqm}$

$600\text{sqm}/\text{sample area (16sqm)} = 37.5$

$37.5 * 15 = 562.5$ (Sapling)

$37.5 * 3 = 112.5$ (small trees)

$37.5 * 1 = 37.5$ (medium trees)

Total: 712.5

Destroyed species (19):

Species	Status
Manilkara hexandra	*
Lepisanthes tetraphylla	LC
Memecylon umbellatum	*
Glycosmis mauritiana	LC
Morinda tinctoria	*
Benkara malabarica	*
Bridelia retusa	LC
Albizia lebbek	LC
Ailanthus excelsa	*
Pongamia pinnata	LC
Azadirachta indica	LC
	EN, Appendix II, Forest
<i>Pterocarpus santalinus</i>	Department
Tabebuia argentea	*
Atalantia monophylla	*
Phoenix pusilla	*
Borassus flabellifer	EN
Jasminum angustifolia	*
Ehretia pubescens	*
Pterospermum acerifolium	LC

Existing but under threat from current proposal:

Scientific name	Diameter CM	Status
Pterocarpus Santalinus	17	EN, Appendix II, Forest Department
Pterocarpus Santalinus	26	EN, Appendix II, Forest Department
Pterocarpus Santalinus	10	EN, Appendix II, Forest Department
Pterocarpus Santalinus	10	EN, Appendix II, Forest Department
Pterocarpus Santalinus	12	EN, Appendix II, Forest Department
Pterocarpus Santalinus	12	EN, Appendix II, Forest Department
Pterocarpus Santalinus	9	EN, Appendix II, Forest Department
Pterocarpus Santalinus	10	EN, Appendix II, Forest Department
Pterocarpus Santalinus	2	EN, Appendix II, Forest Department
Pterocarpus Santalinus	3	EN, Appendix II, Forest Department
Pterocarpus Santalinus	4	EN, Appendix II, Forest Department
Pterocarpus Santalinus	10	EN, Appendix II, Forest Department
Pterocarpus Santalinus	7	EN, Appendix II, Forest Department
Pterocarpus Santalinus	8	EN, Appendix II, Forest Department
Pterocarpus Santalinus	8	EN, Appendix II, Forest Department
Pterocarpus Santalinus	6	EN, Appendix II, Forest Department
Pterocarpus Santalinus	6	EN, Appendix II, Forest Department
Pterocarpus Santalinus	5	EN, Appendix II, Forest Department
Pterocarpus Santalinus	8	EN, Appendix II, Forest Department
Pterocarpus Santalinus	7	EN, Appendix II, Forest Department
Pterocarpus Santalinus	3	EN, Appendix II, Forest Department
Pterocarpus Santalinus	3	EN, Appendix II, Forest Department
Pterocarpus Santalinus	4	EN, Appendix II, Forest Department

Pterocarpus Santalinus	3	EN, Appendix II, Forest Department
Pterocarpus Santalinus	5	EN, Appendix II, Forest Department
Pterocarpus Santalinus	4	EN, Appendix II, Forest Department
Pterocarpus Santalinus	7	EN, Appendix II, Forest Department
Pterocarpus Santalinus	9	EN, Appendix II, Forest Department

Scientific Name	Common Name	Tamil name	Status	Diameter CM	Notes	Regeneration	Pond Inside/ Pond Near
Terminalia arjuna	Arjun tree	வெண் மருது	*	35			
Bridelia retusa	Spinous Kino	Mullu-Vengai	LC	7			
Thevetia peruviana	yellow oleander	Manjal arali	*	8			
Bridelia retusa			LC	10			
khaya senegalensis	African Mahogany		VU	12			
Cassia siamea	Kassod Tree	Manja Kondrai	LC	22		Memecylon umbellatum	
Lepisanthes tetraphylla	Soapberry	சூகமதி	*	6		Glycosmis mauritiana	
Madhuca longifolia	Butter Tree	Iluppai	LC	15		Lepisanthes tetraphylla	
Bridelia retusa			LC	9			
khaya senegalensis			VU	60			
Bridelia retusa			LC	11			
Bridelia retusa			LC	11			
Cassia siamea			LC	17			
Cassia siamea			LC	16			
Cassia siamea			LC	13	Clump		
Bridelia retusa			LC	11			
Azadirachta indica	Neem	வேப்பம்	LC	18			
khaya senegalensis			VU	30			

Scientific Name	Common Name	Tamil name	Status	Diameter CM	Notes	Regeneration	Pond Inside/ Pond Near
khaya senegalensis			VU	34			
Azadirachta indica			LC	12			
Peltophorum	yellow flametree	பெருங்கொன்றை	*	21			
Cassia siamea			LC	19			
Peltophorum			*	11			
Bridelia retusa			LC	11	Clump		
Morinda tinctoria	Indian mulberry	மஞ்சளத்தி	*	8			
Azadirachta indica			LC	13			
Bridelia retusa			LC	11			
walsura trifoliata		Kanjimaram	*	10	Multistem		
Peltophorum			*	15			
Cassia siamea			LC	22			
Cassia siamea			LC	19			
Cassia siamea			LC	19			
Cassia siamea			LC	25		khaya senegalensis	
Cassia siamea			LC	65		Dalbergia paniculata	
Acacia mellifera	Blackthorn			22	Clump	Diospyros ferrea	
Bridelia retusa			LC	18		Ixora arborea	
Bridelia retusa			LC	11			
Bridelia retusa			LC	18			
Lannea coromandelica	Indian ash	உதிய மரம்	LC	19			
Azadirachta indica			LC	9			

Scientific Name	Common Name	Tamil name	Status	Diameter CM	Notes	Regeneration	Pond Inside/ Pond Near
Leucaena leucocephala	jumbay	சூபா புல்	*	9			
khaya senegalensis			VU	27	Clump		
khaya senegalensis			VU	20	Clump	30 Khaya regeneration	
Azadirachta indica			LC	25		20 Thevitia peruviana	
Azadirachta indica			LC	13		10 Diospyrus ferra	
Bridelia retusa			LC	10			
Benkara malabarica		Pidathi	*	5	Clump		
Dalbergia paniculata	Takoli	Erigai	*	9			
Ficus microcarpa	Laurel		LC				
Peltophorum pterocarpum	Fig	Kallichchi	*	16	Clump		
Bridelia retusa			LC	8			
Cassia siamea			LC	15			
Benkara malabarica			*	15			
Azadirachta indica			LC	4	5 Plants		
Ficus benghalensis			*	13			
Bridelia retusa	Banyan	ஆலை	LC	35	Clump		
Bridelia retusa			LC	15			
Bridelia retusa			LC				Benkara malabarica lot of Regeneration
Cassia siamea			LC	13			
Bridelia retusa			LC	15			
Azadirachta indica			LC	19			
Acacia auriculiformis			LC	8	Clump		
khaya senegalensis	Auri	கத்திக் கருவேல்	LC	22		Catunaregam spinosa	
khaya senegalensis			VU	41	Two stem		

Scientific Name	Common Name	Tamil name	Status	Diameter CM	Notes	Regeneration	Pond Inside/ Pond Near
Acacia auriculiformis			LC	25			
Memecylon umbellatum	Ironwood tree	காயா	*	3			
Tamarindus indica	Tamarind	புளியமரம்	LC	10			
Azadirachta indica			LC	11	Clump		Acacia auriculiformis
Bambusa vulgaris	Bamboo	மூங்கில்	*	0		Glycosmis mauritiana	Ochna obtusata
Eucalyptus globulus	Eucalyptus	தைல மரம்	*	27			
Eucalyptus globulus			*	27			
Eucalyptus globulus			*	25			
Azadirachta indica			LC	32		Diospyros ebenum	
Eucalyptus globulus khaya			*	16		Benkara malabarica	
Eucalyptus globulus senegalensis			VU	22		Glycosmis mauritiana	
Mimusops elengi	Spanish Cherry	மகிழ் மரம்	LC	4			
Eucalyptus globulus khaya senegalensis			VU	22	Two stem		
Eucalyptus globulus khaya senegalensis			VU	18	Clump		
Acacia auriculiformis			LC	19			
Bridelia retusa			LC	11			
Eucalyptus globulus khaya senegalensis			VU	25			
Benkara malabarica			*	6	Clump		
Eucalyptus globulus			*	16			Acacia auriculiformis
Cassia siamea			LC	25	Two stem		
Acacia auriculiformis			LC	18			
Terminalia arjuna			*	13			
Azadirachta indica			LC	24		Manikara hexandra	
Acacia auriculiformis			LC	10	two Plant	10 Atalantia	

Scientific Name	Common Name	Tamil name	Status	Diameter CM	Notes	Regeneration	Pond Inside/ Pond Near
Bridelia retusa			LC	16	Clump	monophylla 40 Bengara malabarica	
Acacia auriculiformis			LC	30			
Acacia auriculiformis			LC	16			
Acacia auriculiformis			LC	14			
Acacia auriculiformis			LC	10			
Azadirachta indica			LC	22			
Atalantia monophylla			*	10	15 Plants		
Acacia auriculiformis			LC	24			
Bridelia retusa			LC	15			
Bridelia retusa			LC	19			
Atalantia monophylla	Indian		*	16			
Atalantia monophylla	Atalantia	Kattu Elumeachi	*	8			
Acacia auriculiformis			LC	24			
Bridelia retusa			LC	20	Two stem		
Cassia siamea			LC	38	Two stem		
Acacia auriculiformis			LC	24			
Pterospermum suberifolium			*	23			
Acacia auriculiformis	Welan	வெண்ணங்கு	LC	18			
Acacia auriculiformis			LC	16			
Acacia auriculiformis			LC	14			

Scientific Name	Common Name	Tamil name	Status	Diameter CM	Notes	Regeneration	Pond Inside/ Pond Near
Atalantia monophylla			*	10	4 Plants		
Benkara malabarica			*	5	Clump		
Manilkara hexandra	Ceylon Iron Wood	புரண்டல	*	5	Clump		
Manilkara hexandra			*	12			
Acacia auriculiformis			LC	19			
Bridelia retusa			LC	11			
Bridelia retusa			LC	18			
Manilkara hexandra			*	8	Clump		
Bridelia retusa			LC	20			
Borassus flabellifer	Palmyra palm	புனை மரம்	EN	54			
Borassus flabellifer			EN	51			
Borassus flabellifer			EN	35			
Borassus flabellifer			EN	40			
Bridelia retusa			LC	18			
Acacia auriculiformis			LC	13			
Atalantia monophylla			*	8			
Bridelia retusa			LC	18			
Acacia auriculiformis			LC	13	4 Plants		
Bridelia retusa			LC	22			
Putranjiva roxburghi			LC	9			
Bridelia retusa			LC	8			
Bridelia retusa			LC	14			
Bridelia retusa			LC	27	3 stem		
Acacia auriculiformis			LC	22			

Scientific Name	Common Name	Tamil name	Status	Diameter CM	Notes	Regeneration	Pond Inside/ Pond Near
Albizia lebeck			LC	12			
Bridelia retusa			LC	14			
Benkara malabarica			*	5	4 Plants		
Acacia auriculiformis			LC	10			
Bridelia retusa			LC	16			
Bridelia retusa			LC	10			
Bridelia retusa			LC	13			
Atalantia monophylla			*	6	2 Plants		
Acacia auriculiformis			LC	13			
Acacia auriculiformis			LC	31		18 Atalantia monophylla	
Atalantia monophylla			*	8			
Atalantia monophylla			*	8			
Atalantia monophylla			*	10			
Acacia auriculiformis			LC	22			
Atalantia monophylla			*	9			
khaya senegalensis			VU	22			
Bridelia retusa			LC	22			
Morinda tinctoria			*	16			
Benkara malabarica			*	11	5 stem		
Bridelia retusa			LC	14			
Acacia auriculiformis			LC	10			
Acacia auriculiformis			LC	18			
Acacia auriculiformis			LC	18			

Scientific Name	Common Name	Tamil name	Status	Diameter CM	Notes	Regeneration	Pond Inside/ Pond Near
Ficus religiosa			*	15			
Senna siamea			LC	20			
Peltophorum			*				
pterocarpum				15			
Senna siamea			LC	16			
Bridelia retusa			LC	16			
Khaya senegalensis			VU	80			
Khaya senegalensis			VU	99			
Khaya senegalensis			VU	83			
Khaya senegalensis			VU	23			
Khaya senegalensis			VU	118			
Khaya senegalensis			VU	26			
Pterocarpus indica			*	40			
Khaya senegalensis			VU	75			
Terminalia bellerica			*	33			
Senna siamea			LC	16			
Peltophorum			*				
pterocarpum				10			
Peltophorum			*				
pterocarpum				14			
Lannea coromandelica			LC	22			
Peltophorum			*				
pterocarpum				42			
Senna siamea			LC	31			
Bridelia retusa			LC	14			
Ficus benghalensis			*	90			

Scientific Name	Common Name	Tamil name	Status	Diameter CM	Notes	Regeneration	Pond Inside/ Pond Near
Lannea coromandelica			LC	18			
Senna siamea			LC	30			
Senna siamea			LC	17			
Senna siamea			LC	22			
Dalberia paniculata			*	15			
Bridelia retusa			LC	15			
Azadirachta indica			LC	22			

Under story Calculations:

- Total area not cleared by jcb (adjacent to cleared area)= 600 sqm
 - 785sqm/sample area (16sqm) = 49
 - 49*15 = 735 (Sapling)
 - 49*3= 147 (small trees)
 - 49*1= 49 (medium trees)
- Total area not cleared by jcb (cleared area to southern border) = 5900 sqm
 - 5900 sqm/sample area (16sqm) = 368
 - 368*15 = 5531 (Sapling)
 - 368*3= 1,104 (small trees)
 - 368*1= 368 (medium trees)

	Saplings	small	medium
adjacent to cleared area (1) - above)	735	147	49
cleared area to southern border (2) - above)	5531	1104	368
Sub Total	6266	1251	417
			7934
Divided by two to take into consideration gaps		/2	
Grand total		3,967	

Understory:

Scientific name	Status
Acacia leucophloea	*
Adenantha pavonina	LC
Aglaia elaeagnoides	LC
Alangium salviifolium	*

Scientific name	Status
<i>Allophylus cobbe</i>	*
<i>Atalantia monophylla</i>	*
<i>Azadirachta indica</i>	LC
<i>Benkara malabarica</i>	*
<i>Bridelia retusa</i>	LC
<i>Carmona retusa</i>	*
<i>Cassia fistula</i>	LC
<i>Cassia siamea</i>	LC
<i>Catanaregum spinosa</i>	*
<i>Cordia domestica</i>	*
<i>Dalbergia latifolia</i>	VU, Appendix II, Forest Department
<i>Dalbergia paniculata</i>	*
<i>Derris ovalifolia</i>	*
<i>Dichrostachys cinerea</i>	LC
<i>Dimorphocalyx glabellus</i>	*
<i>Diospyros ebenum</i>	DD, Appendix II, Forest department
<i>Diospyros ferrea</i> var. <i>buxifolia</i>	Appendix II, Forest department
<i>Ehretia pubescens</i>	*
<i>Ficus benghalensis</i>	*
<i>Ficus religiosa</i>	*
<i>Flacourtia indica</i>	LC
<i>Flueggea leucopyrus</i>	LC
<i>Glycosmis mauritiana</i>	LC
<i>Grewia hirsuita</i>	*
<i>Grewia rhamnifolia</i>	*
<i>Ixora pavetta</i>	*
<i>Lannea coromandelica</i>	LC
<i>Lepisanthes tetraphylla</i>	LC
<i>Madhuca longifolia</i>	*
<i>Mangifera indica</i>	DD
<i>Manilkara hexandra</i>	*
<i>Manilkara zapota</i>	LC
<i>Ochna obtusata</i>	*
<i>Phoenix pusilla</i>	*
<i>Phoenix sylvestris</i>	*
<i>Pongamia pinnata</i>	LC
<i>Scutia myrtina</i>	LC
<i>Tarenna asiatica</i>	*
<i>Terminalia bellirica</i>	*
<i>Walsura trifoliata</i>	*

Trees to be destroyed following alternative proposal:

Scientific Name	Diameter CM	Status
Pongamia pinnata	13	LC
Pongamia pinnata	13	LC
Ehretia pubescens	5	*
Bridelia retusa	13	LC
khaya senegalensis	6	VU
Bridelia retusa	28	LC
Bridelia retusa	14	LC
Atalantia monophylla	6	*
Bridelia retusa	14	LC
Bridelia retusa	13	LC
Bridelia retusa	12	LC
Acacia auriculiformis	12	LC
Bridelia retusa	14	LC
Bridelia retusa	7	LC
Acacia auriculiformis	15	LC
Bridelia retusa	9	LC
Bridelia retusa	12	LC
Bridelia retusa	15	LC
Bridelia retusa	14	LC
Acacia auriculiformis	20	LC
Bridelia retusa	23	LC
Acacia auriculiformis	8	LC
Bambusa vulgaris	29	*
khaya senegalensis	11	VU
khaya senegalensis	30	VU
Millingtonia hortensis	16	*
Ehretia pubescens	3	*
Bridelia retusa	29	LC
Haplophragma adenophyllum	9	*
Acacia auriculiformis	18	LC
Ehretia pubescens	8	*
khaya senegalensis	10	VU
Atalantia monophylla	7	*
Atalantia monophylla	8	*
Bridelia retusa	13	LC
Atalantia monophylla	6	*
Bridelia retusa	20	LC
Atalantia monophylla	5	*
Tamarindus indica	20	LC
Lepisanthes tetraphylla	13	LC
Atalantia monophylla	6	*
Dalbergia paniculata	14	*
Lepisanthes tetraphylla	11	LC
Azadirachta indica	17	LC
Lepisanthes tetraphylla	3	LC
Morinda tinctoria	10	*

Scientific Name	Diameter CM	Status
Azadirachta indica	17	LC
Acacia auriculiformis	15	LC
Acacia auriculiformis	14	LC
Benkara malabarica	3	*
Bridelia retusa	8	LC
Benkara malabarica	4	*
Cassia siamea	24	LC
Terminalia arjuna	18	*
Reissantia indica	10	*
Benkara malabarica	3	*
Azadirachta indica	16	LC
Acacia auriculiformis	29	LC
Cassia siamea	18	LC
Mangifera indica	33	DD
Acacia auriculiformis	17	LC
Bridelia retusa	18	LC
Acacia auriculiformis	15	LC
Bridelia retusa	23	LC
Acacia auriculiformis	19	LC
Bridelia retusa	17	LC
khaya senegalensis	39	VU
khaya senegalensis	18	VU
Azadirachta indica	17	LC
Azadirachta indica	18	LC
Peltophorum pterocarpum	22	*
Peltophorum pterocarpum	18	*
Bridelia retusa	22	LC
Bridelia retusa	11	LC
Acacia auriculiformis	9	LC
Peltophorum pterocarpum	8	*
Bridelia retusa	6	LC
Cassia siamea	12	LC
Bridelia retusa	10	LC
Cassia siamea	13	LC
Acacia auriculiformis	10	LC
Acacia auriculiformis	12	LC
Bridelia retusa	10	LC
Dalbergia paniculata	6	*
Benkara malabarica	5	*
Bridelia retusa	11	LC
Azadirachta indica	16	LC
Ficus religiosa	18	*

Youth Centre/Bliss

Trees Destroyed:

ID	Scientific Name	Stem diameter CM	common name	Tamil name	Status
6b	Azadirachta indica	22	Neem	Vembu	LC
7	Azadirachta indica	17	Neem	Vembu	LC
8	Azadirachta indica	12	Neem	Vembu	LC
9	Azadirachta indica	10	Neem	Vembu	LC
10	Putranjiva roxburghii	3		Karupala	LC
11	Putranjiva roxburghii	4		Karupala	LC
12	Putranjiva roxburghii	3		Karupala	LC
		2			DD, Appendix II, Forest department
13	Diospyros ebenum		Ebony	Karungaali	LC
14	Azadirachta indica	18	Neem	Vembu	LC
22	Putranjiva roxburghii	6		Karupala	LC
23	Tricalysia sphaerocarpa	4		Pachai Nazhuvai	*
24	Tricalysia sphaerocarpa	4		Pachai Nazhuvai	*
25	Azadirachta indica	16	Neem	Vembu	LC
26	Memecylon umbellatum	4	Miracle	Kaasan	*
29	Tricalysia sphaerocarpa	3		Pachai Nazhuvai	*
30	Tricalysia sphaerocarpa	3		Pachai Nazhuvai	*
31	Polyalthia korinti	4		Sirunetti	*
32	Tricalysia sphaerocarpa	4		Pachai Nazhuvai	*
33	Tricalysia sphaerocarpa	2		Pachai Nazhuvai	*
34	Acacia auriculiformis	6	Work	Kaththi Karuvel	LC
35	Tricalysia sphaerocarpa	4		Pachai Nazhuvai	*
36	Ficus benghalensis	48	Banyan	Aala maram	*
37	Tricalysia sphaerocarpa	4		Pachai Nazhuvai	*
38	Peltophorum pterocarpum	11	Service	Perungondrai	*
45	Pterospermum suberifolium	17		Vennangu	*

ID	Scientific Name	Stem diameter CM	common name	Tamil name	Status
46	Acacia auriculiformis	18	Work	Kaththi Savukku	LC
47	Bridelia retusa	18	Mullu Alamaram	Mul Vengai	LC
48	Pterospermum suberifolium	19		Vennangu	*
49	Borassus flabellifer	45	Palmyra	Panai	EN
50	Morinda tinctoria	18	Nona maram	Mannanunai	*
51	Lannea coromandelica	24	Odaimaram	Odiyan	LC
53	Azadirachta indica	23	Neem	Vembu	LC
54	Citrus sp.	10	Lemon		LC
55	Citrus sp.	10	Lemon		LC
56	Murraya paniculata	7	Queen of the Night	Vengarai	*
57	Areca lutescens	8	Cluster palm		*
59	Peltophorum pterocarpum	35	Service	Perungondrai	*
60	Pterospermum suberifolium	24		Vennangu	*
62	Azadirachta indica	#REF!	Neem	Vembu	LC
76	Peltophorum pterocarpum	28	Service	Perungondrai	*
80	Mitragyna parvifolia	15	Forest Kadamba	Neerkkadambai	*
82	Mitragyna parvifolia	10	Forest Kadamba	Neerkkadambai	*
84	Mimusops elengi	8	Patience	Magizham	LC
86	Diospyros ebenum	2	Ebony	Karungaali	DD, Appendix II, Forest department
87	Pterospermum suberifolium	13		Vennangu	*
88	Mitragyna parvifolia	11	Forest Kadamba	Neerkkadambai	*
89	Mitragyna parvifolia	14	Forest Kadamba	Neerkkadambai	*
90	Mitragyna parvifolia	9	Forest Kadamba	Neerkkadambai	*
91	Mimusops elengi	11	Patience	Magizham	LC
92	Mitragyna parvifolia	12	Forest Kadamba	Neerkkadambai	*
93	Mitragyna parvifolia	9	Forest Kadamba	Neerkkadambai	*

ID	Scientific Name	Stem diameter CM	common name	Tamil name	Status
95	Azadirachta indica	24	Neem	Vembu	LC
96	Ixora pavetta	8	Straightforwardness	Koran	*
97	Gardenia resinifera	6	Hill gardenia	Kambali Pisin	*
98	Gardenia resinifera	0	Hill gardenia	Kambali Pisin	*
99	Lepisanthes tetraphylla	4		Gugamathi	LC
100	Lannea coromandelica	22	Odaimaram	Odiyan	LC
101	Peltophorum pterocarpum	13	Service	Perungondrai	*
108	Cassia fistula	14	Imagination	Sarakkondrai	LC
110	Memecylon umbellatum	4	Miracle	Kaasan	*
111	Stereospermum personatum	22		Patiri	*
112	Walsura trifoliata	11		Valsura	*
113	Pamburus missionis	5	Wild orange	Kattu Naarathal	*
114	Azadirachta indica	13	Neem	Vembu	LC
115	Azadirachta indica	14	Neem	Vembu	LC
116	Morinda tinctoria	11	Nona maram	Mannanunai	*
121	Ixora pavetta	9	Straightforwardness	Koran	*
122	Senna spectabilis	30		Manjal konrai	LC
123	Caesalpinia coriaria	14	Divi Divi	Konavel	*
124	Tarenna asiatica	21		Tharani	*
126	Senna spectabilis	13		Manjal konrai	LC
127	Ehretia pubescens	11		Aadali	*
128	Pamburus missionis	4	Wild orange	Kattu Naarathal	*
129	Caesalpinia coriaria	12	Divi Divi	Konavel	*
130	Pongamia pinnata	5	Pongam maram	Pungan	LC
131	Atalantia monophylla	4	Absence of Desire	Kaattu Elumitchai	*
132	Peltophorum pterocarpum	20	Service	Perungondrai	*
133	Cassia fistula	10	Imagination	Sarakkondrai	LC

ID	Scientific Name	Stem diameter CM	common name	Tamil name	Status
136	Diospyros ebenum	4	Ebony	<i>Karungaali</i>	DD, Appendix II, Forest department *
137	Peltophorum pterocarpum	18	Service	<i>Perungondrai</i>	*
138	Peltophorum pterocarpum	18	Service	<i>Perungondrai</i>	*
139	Memecylon umbellatum	5	Miracle	<i>Kaasan</i>	*
140	Peltophorum pterocarpum	16	Service	<i>Perungondrai</i>	*
141a	Garcina spicata	4		<i>Kaattuppinnai</i>	*
141b	Pterocarpus santalinus	32	Red Sanders	<i>Santhana</i>	EN, Appendix II, Forest Department *
143	Peltophorum pterocarpum	21	Service	<i>Perungondrai</i>	LC
144	Gmelina asiatica	4		<i>Nilakkumala</i>	DD, Appendix II, Forest department *
149	Diospyros ebenum	4	Ebony	<i>Karungaali</i>	*
150	Peltophorum pterocarpum	10	Service	<i>Perungondrai</i>	*
151	Peltophorum pterocarpum	15	Service	<i>Perungondrai</i>	LC
152	Azadirachta indica	25	Neem	<i>Vembu</i>	LC
153	Senna spectabilis	22		<i>Manjal konrai</i>	LC
154	Azadirachta indica	13	Neem	<i>Vembu</i>	LC
155	Senna spectabilis	8		<i>Manjal konrai</i>	*
157	Stereospermum personatum	8		<i>Patiri</i>	*
158	Caesalpinia coriaria	6	Divi Divi	<i>Konavel</i>	*
160	Caesalpinia coriaria	7	Divi Divi	<i>Konavel</i>	*
161	Caesalpinia coriaria	9	Divi Divi	<i>Konavel</i>	*
162	Caesalpinia coriaria	7	Divi Divi	<i>Konavel</i>	*
163	Caesalpinia coriaria	24	Divi Divi	<i>Konavel</i>	*
164	Caesalpinia coriaria	13	Divi Divi	<i>Konavel</i>	*

ID	Scientific Name	Stem diameter CM	common name	Tamil name	Status
165	Caesalpinia coriaria	18	Divi Divi	<i>Konavel</i>	*
167	Atalantia monophylla	2	Absence of Desire	<i>Kaattu Elumitchai</i>	*
168	Drypetes sepiaria	3		<i>Veerai</i>	*
169	Pamburus missionis	2	Wild orange	<i>Kattu Naarathal</i>	*
174	Erhetia pubescens	8		<i>Aadali</i>	*
175	Morinda tinctoria	9	Nona maram	<i>Mannanunai</i>	*
176	Morinda tinctoria	7	Nona maram	<i>Mannanunai</i>	*
177	Mimusops elengi	20	Patience	<i>Magizham</i>	LC
180	Semecarpus anacardium	6	Marking nut	<i>Kalakam</i>	LC
181	Semecarpus anacardium	10	Marking nut	<i>Kalakam</i>	LC
182	Tabebuia argentea	10			*
186	Walsura trifoliata	3		<i>Valsura</i>	*
187	Cassia fistula	8	Imagination	<i>Sarakkondrai</i>	LC
196	Walsura trifoliata	4		<i>Valsura</i>	*
198	Tarenna asiatica	3		<i>Tharani</i>	*
199	Walsura trifoliata	3		<i>Valsura</i>	*
200	Walsura trifoliata	3		<i>Valsura</i>	*
201	Morinda tinctoria	3	Nona maram	<i>Mannanunai</i>	*
208	Morinda tinctoria	4	Nona maram	<i>Mannanunai</i>	*
209	Walsura trifoliata	3		<i>Valsura</i>	*
210	Azadirachta indica	10	Neem	<i>Vembu</i>	LC
211	Murraya paniculata	3	Queen of the Night	<i>Vengarai</i>	*
212	Cleisanthus collinus	10		<i>Oduvan</i>	*
213	Cleisanthus collinus	11		<i>Oduvan</i>	*
222	Azadirachta indica	6	Neem	<i>Vembu</i>	LC
223	Walsura trifoliata	3		<i>Valsura</i>	*
224	Alangium salvifolium	10		<i>Azhinjal</i>	*

ID	Scientific Name	Stem diameter CM	common name	Tamil name	Status
225	Bridelia retusa	17	Mullu Alamaram	<i>Mul Vengai</i>	LC
226	Albizia lebbek	10	Intergral Wisdom	<i>Vaagai</i>	LC
227	Azadirachta indica	25	Neem	<i>Vembu</i>	LC
228	Drypetes sepiaria	8		<i>Vearai</i>	*
229	Walsura trifoliata	3		<i>Valsura</i>	*
230	Morinda tinctoria	4	Nona maram	<i>Mannanunai</i>	*
231	Morinda tinctoria	5	Nona maram	<i>Mannanunai</i>	*
232	Tarenna asiatica	4		<i>Tharani</i>	*
233	Walsura trifoliata	4		<i>Valsura</i>	*
234	Caesalpinia coriaria	4	Divi Divi	<i>Konavel</i>	*
235	Drypetes sepiaria	10		<i>Vearai</i>	*
236	Drypetes sepiaria	7		<i>Vearai</i>	*
237	Erhetia pubescens	8		<i>Aadali</i>	*
238	Pterospermum suberifolium	7		<i>Vennangu</i>	*
239	Caesalpinia ferrea	4		<i>Irul</i>	LC
240	Azadirachta indica	14	Neem	<i>Vembu</i>	LC
302	Lannea coromandelica	26	Odaimaram	<i>Odiyan</i>	LC
304	Walsura trifoliata	2		<i>Valsura</i>	*
306	Azadirachta indica	27	Neem	<i>Vembu</i>	LC
307	Walsura trifoliata	3		<i>Valsura</i>	*
308	Walsura trifoliata	3		<i>Valsura</i>	*
309	Diospyros ebenum	3	Ebony	<i>Karungaali</i>	DD, Appendix II, Forest department
310	Azadirachta indica	19	Neem	<i>Vembu</i>	LC
311	Cassia fistula	8	Imagination	<i>Sarakkondrai</i>	LC
312	Azadirachta indica	13	Neem	<i>Vembu</i>	LC
313	Azadirachta indica	15	Neem	<i>Vembu</i>	LC

ID	Scientific Name	Stem diameter CM	common name	Tamil name	Status
314	Mimusops elengi	13	Patience	<i>Magizham</i>	LC
318	Cassia fistula	6	Imagination	<i>Sarakkondrai</i>	LC
319	Diospyros ebenum	13	Ebony	<i>Karungaali</i>	DD, Appendix II, Forest department
320	Azadirachta indica	19	Neem	<i>Vembu</i>	LC
321	Azadirachta indica	25	Neem	<i>Vembu</i>	LC
322	Peltophorum pterocarpum	17	Service	<i>Perungondrai</i>	*
323	Walsura trifoliata	3		<i>Valsura</i>	*
328	Diospyros ebenum	4	Ebony	<i>Karungaali</i>	DD, Appendix II, Forest department
330	Walsura trifoliata	3		<i>Valsura</i>	*
331	Senna spectabilis	6		<i>Manjal konrai</i>	LC
332	Walsura trifoliata	4		<i>Valsura</i>	*
336	Dalbergia paniculata	7		<i>Erigai</i>	*
337	Lanea coromandelica	8	Odaimaram	<i>Odiyan</i>	LC
338	Memecylon umbellatum	4	Miracle	<i>Kaasan</i>	*
339	Ixora pavetta	6	Straightforwardness	<i>Koran</i>	*
340	Alangium salvifolium	8		<i>Azhinjil</i>	*
344	Morinda tinctoria	12	Nona maram	<i>Mannanunai</i>	*
345	Azadirachta indica	13	Neem	<i>Vembu</i>	LC
346	Pamburus missionis	4	Wild orange	<i>Kattu Naarathal</i>	*
358	Walsura trifoliata	4		<i>Valsura</i>	*
360	Walsura trifoliata	4		<i>Valsura</i>	*
361	Tabebuia argentea	17			*
365	Tabebuia argentea	15			*
366	Walsura trifoliata	22		<i>Valsura</i>	*

ID	Scientific Name	Stem diameter CM	common name	Tamil name	Status
367	Tabebuia argentea	21			*
370	Pamburus missionis	7	Wild orange	<i>Kattu Naarathal</i>	*
374	Pterospermum suberifolium	13		<i>Vennangu</i>	*
376	Ceiba pentandra	10	Silk cotton	<i>Shalmali</i>	LC
377	Bridelia retusa	13	Mullu Alamaram	<i>Mul Vengai</i>	LC
386	Lannea coromandelica	16	Odaimaram	<i>Odiyan</i>	LC
387	Morinda tinctoria	18	Nona maram	<i>Mannanunai</i>	*
389	Tabebuia argentea	25			*

Alternative to YC/Bliss area:



Unity Pavilion to Solar Kitchen

Scientific Name	Diameter CM	Number of trees	Status
Pongamia pinnata	19	Clump	LC
Cassia siamea	19	12x	LC
Peltophorum pterocarpum	22		*
Borassus flabellifer	35		EN
Tabebuia argentea	15		*
Borassus flabellifer	38		EN
Butea monosperma	2	2x	LC
Hardwickia binnata	34		*
Hardwickia binnata	30		*
Acacia auriculiformis	15		LC
Cassia roxburghii	14		*
Acacia auriculiformis	11		LC
Cassia siamea	18	clump	LC
Acacia auriculiformis	32		LC
Azadirachta indica	35		LC
Borassus flabellifer	38		EN
Borassus flabellifer	41		EN
Acacia auriculiformis	11		LC
Azadirachta indica	22		LC
Albizia lebbeck	21		LC
Acacia auriculiformis	10		LC

Scientific Name	Diameter		Status
	CM	Number of trees	
Acacia auriculiformis	14		LC
Borassus flabellifer	32		EN
Cassia siamea	11		LC
Peltophorum			*
pterocarpum	32		
Terminalia arjuna	18		*
Terminalia arjuna	18		*
Terminalia arjuna	16		*
Butea monosperma	19		LC
Peltophorum			*
pterocarpum	35		
Chionanthus zeylanicus	5		*
Acacia auriculiformis	11		LC
Acacia auriculiformis	8	7x	LC
Terminalia arjuna	14		*
Terminalia arjuna	14		*
Terminalia arjuna	12		*
Borassus flabellifer	29	4x	EN
Borassus flabellifer	13	4x	EN
Acacia auriculiformis	16		LC
Acacia auriculiformis	13		LC
Azadirachta indica	15		LC
Borassus flabellifer	32		EN
Butea monosperma	10		LC
Acacia auriculiformis	11	3x	LC
Terminalia arjuna	16		*
Terminalia arjuna	19		*
Terminalia arjuna	9		*
Terminalia arjuna	21		*
Azadirachta indica	19		LC
Terminalia arjuna	20		*
Terminalia arjuna	43		*
Bridelia retusa	18		LC
Borassus flabellifer	35	3x	EN
Azadirachta indica	21		LC
Azadirachta indica	12		LC
Lannea coromandelica	25		LC
Terminalia arjuna	13		*
Azadirachta indica	14		LC
Azadirachta indica	13	Clump	LC
Green Bamboo	0	Mature clump	LC
Acacia auriculiformis	10	2x	LC
Acacia auriculiformis	12	3x	LC
Azadirachta indica	6	2x	LC
Acacia auriculiformis	8	8x	LC
Azadirachta indica	13	2x	LC

Scientific Name	Diameter		Status
	CM	Number of trees	
Acacia auriculiformis	13	4x	LC
Azadirachta indica	18		LC
Bridelia retusa	16		LC
Bignonia magnifica	0	Large spreading creeper	*
Mangifera indica	13	clump	DD
Borassus flabellifer	35		EN
Azadirachta indica	19		LC
Ceiba pentandra	24		LC
Dichrostachys cineriae	10	2x	*
Peltophorum pterocarpum	17		*
Acacia auriculiformis	21		LC
Cassia fistula	11		LC
Diospyros ebenum	8		DD, Appendix II, Forest department
Pterospermum suberifolium	13	clump	*
Atalantia monophylla	10		*
Mimusops elengi	6		LC
Murraya paniculata	4		*
Khaya senegalensis	24		VU
Ficus benghalensis	21		*
Ixora pavetta	4	clump	*
Murraya paniculata	6		*
Azadirachta indica	8		LC
Ficus benghalensis	46		*
Azadirachta indica	19		LC
Bridelia retusa	10		LC
Pterocarpus santalinus	34		EN, Appendix II, Forest Department
Pongamia pinnata	17		LC
Cochlospermum religiosum	5		*
Murraya paniculata	2	7x	*
Lannea coromandelica	30		LC
Peltophorum pterocarpum	32		*
Mangifera indica	29		DD
Unknown palm	11	2x	
Borassus flabellifer	32	25x	EN
Azadirachta indica	24		LC
Ficus benghalensis	49		*
Peltophorum pterocarpum	57		*
Azadirachta indica	48		LC
Bridelia retusa	13		LC

Scientific Name	Diameter		Status
	CM	Number of trees	
Terminalia arjuna	29		*
Khaya senegalensis	54		VU
Pterocarpus santalinus	51		EN, Appendix II, Forest Department
Murraya paniculata	3	50x	
Mimusops elengi	12		LC
Khaya senegalensis	21		VU
Mimusops elengi	18		LC
Terminalia arjuna	14		*
Holoptelia integrifolia	13	Clump	*
Pterospermum xylocarpum	19		*
Bignonia magnifica	0	Large spreading creeper	*
Lannea coromandelica	29		LC
Acacia auriculiformis	10	5x	LC
Acacia auriculiformis	29		LC
Morinda coreia	9		*
Morinda coreia	6		*
Acacia auriculiformis	16		LC
Azadirachta indica	28		LC
Azadirachta indica	15		LC
Cassia fistula	15		LC
Acacia auriculiformis	16		LC
Hardwickia binnata	11		*
Hardwickia binnata	18		*
Hardwickia binnata	10		*
Hardwickia binnata	18		*
Cassia siamea	13		LC
Benkara malabarica	5	Clump	*
Morinda coreia	5	4x	*
Cassia siamea	16		LC
Azadirachta indica	21		LC
Bridelia retusa	22	2x	LC
Borassus flabellifer	32		EN
Lannea coromandelica	41		LC
Cassia siamea	9		LC
Cassia siamea	13	7x	LC
Cassia siamea	25	clump	LC
Borassus flabellifer	35		EN
Bridelia retusa	18		LC
Acacia auriculiformis	16		LC
Pterospermum suberifolium	18		*
Dalbergia paniculata	23		*
Atalantia monophylla	11	clump	*

Scientific Name	Diameter		Status
	CM	Number of trees	
Ehretia pubescens	6	clump	*
Pterospermum suberifolium	4		*
Atalantia monophylla	52		*
Atalantia monophylla	9		*
Cassia roxburghii	7		*
Flacourtia indica	5	clump	LC
Azadirachta indica	5	clump	LC
Holoptelia integrifolia	7	8x	*
Caesalpinia coriaria	14	clump	*
Tamarindus indica	16		LC
Pterospermum suberifolium	9		*
Cassine glauca	4		*
Cassia siamea	29	2x	LC
Walsura trifoliata	2		*
Diospyros ebenum	2		DD, Appendix II, Forest department
Pongamia pinnata	6		LC
Green Bamboo	0	4x Mature clumps	LC
Ficus microcarpa	32		LC
Pterospermum suberifolium	25		*
Clausena dentata	2		*
Delonix regia	11		LC
Cassia siamea	11		LC
Azadirachta indica	25		LC
Gliricidia	7		LC
Benkara malabarica	2	clump	*
Cassia siamea	8	4x	LC
Bridelia retusa	25		LC
Gliricidia	5		LC
Gliricidia	8		LC
Cassia siamea	12		LC
Cassia siamea	11		LC
Cassia roxburghii	25		*
Delonix regia	29		LC
Azadirachta indica	32		LC
Plumeria alba	14		*
Azadirachta indica	32		LC
Aegle marmelos	4		NT
Araucaria columnaris	8		LC
Murraya paniculata	6		
Morinda coreia	5		*
Cassia siamea	19		LC
Araucaria columnaris	22		LC

Scientific Name	Diameter		Status
	CM	Number of trees	
Azadirachta indica	19		LC
Cassia siamea	46		LC
Ficus religiosa	22		*
Mangifera indica	21		DD
Lannea coromandelica	18		LC
Flower shrub	4		LC
Citrus limon	6		LC
Cassia siamea	10		LC
Phyllanthus emblica	8	clump	*
Morinda coreia	6		*
Azadirachta indica	31		LC
Bridelia retusa	19		LC
Bridelia retusa	15		LC
Peltophorum			*
pterocarpum	29		
Cassia fistula	2		LC
Ehretia pubescens	8		*
Annona cherimola	8		LC
Peltophorum			*
pterocarpum	64		
Azadirachta indica	25		LC
Morinda coreia	14		*
Ehretia pubescens	8	clump	*
Borassus flabellifer	27		EN
Millingtonia hortensis	20		*
Khaya senegalensis	30		VU
Bridelia retusa	32		LC
Morinda coreia	11		*
Dalbergia paniculata	29		*
Borassus flabellifer	29	10x	EN
Tamarindus indica	19		LC
Bridelia retusa	25	2x	LC
Azadirachta indica	32		LC
Azadirachta indica	49		LC
Ochna kirkii	2	clump	LC
Morinda coreia	5		*
Cassia siamea	32		LC
Lannea coromandelica	48		LC
Cassia siamea	32	2x	LC
Cassia siamea	8		LC
Cassia siamea	33		LC
Cassia siamea	15		LC
Cassia siamea	8		LC
Cassia siamea	14		LC
Morinda coreia	20		*
Azadirachta indica	5		LC

Scientific Name	Diameter		Status
	CM	Number of trees	
Lannea coromandelica	4		LC
Annona cherimola	8		LC
Azadirachta indica	25		LC
Azadirachta indica	32		LC
Flower bush	10	clump	LC
Annona cherimola	8		LC
Dalbergia paniculata	9		*
Atalantia monophylla	10		*
Annona cherimola	10		LC
Dalbergia paniculata	49		*
Tamarindus indica	32		LC
Ochna kirkii	1		LC
Azadirachta indica	25		LC
Azadirachta indica	19		LC
Bridelia retusa	22		LC
Azadirachta indica	26		LC
Delonix regia	8	clump	LC
Azadirachta indica	13		LC
Morinda coreia	5	3x	*
Senna spectabilis	17		LC
Morinda coreia	5		*
Caesalpinia coriaria	25		*
Khaya senegalensis	102		VU
Caesalpinia coriaria	20		*
Caesalpinia coriaria	16	5x	*
Cassia fistula	30		LC
Dalbergia paniculata	24		*
Azadirachta indica	25		LC
Memecylon umbellatum	4	clump	*
Acacia auriculiformis	28		LC
Dalbergia paniculata	17		*
Dalbergia paniculata	9		*
Dalbergia paniculata	15		*
Mimusops elengi	18		LC
Millingtonia hortensis	10	3x	*
Lannea coromandelica	10	3x	LC
Tectona grandis	16		Forest Department
Eucalyptus globulus	45		*
Tamarindus indica	24		LC
Pterocarpus marsupium	21		NT
Khaya senegalensis	30		VU
Khaya senegalensis	37		VU
Azadirachta indica	36		LC
Tamarindus indica	24		LC

Gaia

Scientific name	Common Name	Diameter CM	no. trunks	Status
Mitragyna parvifolia		16		*
				DD, Appendix II, Forest department
Diospyros ebenum	Ebony	4		VU
Khaya senegalensis	Khaya	5		*
Pleurostyliia opposita		3		*
Ixora arborea		7	3	*
Morinda coreia		6		*
Capparis divericata		7	3	*
Clausena dentata		3		*
Dolichandrone falcata		9		*
Dolichandrone falcata		12		*
Atalantia racemosa	Wild lemon	8	4	*
Firmiana colorata		16		*
Chloroxylon swietenia		15		VU
Walsura trifoliata		34	4	*
Morinda coreia		5		*
				DD, Appendix II, Forest department
Diospyros ebenum	Ebony	19		*
Murraya paniculata		3		VU
Chloroxylon swietenia		5		*
Peltophorum pterocarpum		22		*
Drypetes sepiaria		9	5	*
Tricalysia sphaerocarpa		3		*
Walsura trifoliata		18	2	*
Vitex leucoxylon		11		LC
Tricalysia sphaerocarpa		7		*
Vitex leucoxylon		13		LC
Walsura trifoliata		7	3	*
Acacia auricoliformis		12		LC
Peltophorum pterocarpum		29		*
Mitragyna parvifolia		26		*
Suregada angustifolia		7	2	*
Antidesma ghaesambillia		12		*
Walsura trifoliata		19	2	*
Holoptelia integrifolia		17		*
Morinda coreia		9		*
Gardenia resinifera		22	4	*
Chloroxylon swietenia		2		VU
Chloroxylon swietenia		33	2	VU

Scientific name	Common Name	Diameter CM	no. trunks	Status
Tricalysia sphaerocarpa		8		*
Pleurostyliya opposita		7	3	*
Chloroxylon swietenia		3		VU
Diospyros ebenum	Ebony	11		DD, Appendix II, Forest department
Drypetes sepiaria		6	2	*
Grewia rhamnifolia		10		*
Semecarpus anarcadium		15		LC
Mitragyna parvifolia		18		*
Memecylon umbellatum		12	6	*
Tricalysia sphaerocarpa		12	2	*
Diospyros montana		18	2	*
Walsura trifoliata		22	3	*
Gardenia resinifera		14		*
Gmelinia arborea		29		*
Mitragyna parvifolia		17		*
Madhuca longifolia		8	2	*
Gardenia resinifera		17	4	*
Khaya senegalensis		10		VU
Walsura trifoliata		4		*
Walsura trifoliata		4		*
Chloroxylon swietenia		8		VU
Senna siamea		27		LC
Walsura trifoliata		11		*
Dimorphocalyx glabellus		8	7	*
Peltophorum pterocarpum		26		*
Khaya senegalensis		12		VU
Diospyros ebenum	Ebony	4		DD, Appendix II, Forest department
Dimorphocalyx glabellus		3	5	*
Ixora arborea		4		*
Tricalysia sphaerocarpa		4		*
Peltophorum pterocarpum		25		*
Pleurostyliya opposita		8	3	*
Dimorphocalyx glabellus		5	2	*
Dimorphocalyx glabellus		3		*
Suregada angustifolia		16	3	*

Scientific name	Common Name	Diameter CM	no. trunks	Status
Memecylon umbellatum		3		*
Diospyros ebenum	Ebony	4		DD, Appendix II, Forest department
Tricalysia sphaerocarpa		7		*
Alangium salvifolium		9		*
Diospyros ebenum	Ebony	4		DD, Appendix II, Forest department
Pleurostyliia opposita		10	2	*
Diospyros ebenum		4		DD, Appendix II, Forest department
Memecylon umbellatum		4		*
Pamburus missionis		3		*
Diospyros ebenum	Ebony	5		DD, Appendix II, Forest department
Walsura trifoliata		4		*
Polyalthia suberosa		3		*
Pamburus missionis		2		*
Khaya senegalensis		11		VU
Khaya senegalensis		81		VU
Memecylon umbellatum		3		*
Peltophorum pterocarpum		23		*
Khaya senegalensis		12		VU
Diospyros ebenum	Ebony	4		DD, Appendix II, Forest department
Ixora arborea		5		*
Walsura trifoliata		5		*
Diospyros ebenum		5		*
Dalbergia paniculata		19	2	*
Pleurostyliia opposita		11		*
Diospyros ebenum		6		DD, Appendix II, Forest department
Peltophorum pterocarpum		25		*
Adenantha pavonina		29		*
Peltophorum pterocarpum		35	4	*
Tricalysia sphaerocarpa		8	3	*
Peltophorum pterocarpum		24		*
Pongamia pinnata		14	3	LC
Peltophorum pterocarpum		23		*
Peltophorum pterocarpum		25		*
Senna siamea		20	4	LC
Peltophorum pterocarpum		27		*

Scientific name	Common Name	Diameter CM	no. trunks	Status
Walsura trifoliata		6		*
Diospyros ebenum	Ebony	7		DD, Appendix II, Forest department
Diospyros ebenum	Ebony	3		DD, Appendix II, Forest department
Tricalysia sphaerocarpa		10	3	*
Dimorphocalyx glabellus		8	7	*
Pamburus missionis		3		*
Diospyros ferrea		3	2	Appendix II, Forest department
Diospyros ferrea		3		Appendix II, Forest department
Peltophorum pterocarpum		28		*
Capparis brevispina		4		*
Tricalysia sphaerocarpa		1		*
Diospyros ebenum		4		DD, Appendix II, Forest department
Albizia lebbeck		16		LC
Morinda coreia		19		*
Diospyros ebenum	Ebony	5		DD, Appendix II, Forest department
Miliusa eriocarpa		3		*
Pamburus missionis		5		*
Tricalysia sphaerocarpa		7		*
Antidesma ghaesambillia		4		*
Peltophorum pterocarpum		29		*
Miliusa eriocarpa		2		*
Eugenia bracteata		4		*
Diospyros ebenum	Ebony	10		DD, Appendix II, Forest department
Murraya paniculata		4		*
Antidesma ghaesambillia		11		*
Pleurostylia opposita		9		*
Diospyros ebenum	Ebony	6		DD, Appendix II, Forest department
Diospyros ebenum	Ebony	7		DD, Appendix II, Forest department
Chionanthus zeylanicus		2		*
Jasminum cuspidatum		3		*

Scientific name	Common Name	Diameter CM	no. trunks	Status
Diospyros ebenum	Ebony		2	DD, Appendix II, Forest department
Antidesma ghaesambillia		15	3	*
Walsura trifoliata		10	3	*
Murraya paniculata		4		*
Miliusa eriocarpa		3		*
Senna auriculata		4		*
Diospyros ferrea		1		Appendix II, Forest department
Peltophorum pterocarpum		26		*
Azadirachta indica	Neem	20		LC
Antidesma ghaesambillia		4		*
Memecylon umbellatum		4		*
Azadirachta indica	Neem	51		LC
Khaya senegalensis		55		VU
Khaya senegalensis		60		VU

Ring and Radial ROWs

Calculation of understory trees and shrubs (<12cm diameter stem)

3,967 in 5900 Sq. meter (conservative number)

5900 Sq. meter = 1.45792175 Acres

78.8 acres/1.45792175 acres= 54.04954003875722

54.04954003875722 * 3,967 (understory) = 2,14,414.5253337499 understory trees and shrubs (<12cm diameter stem) (if 100% canopy cover)

214414.5253337499 × 0.6956 (69.56%) = 1,49,146.7438221564 (understory if 69.56% canopy cover)

Calculation of trees and shrubs ~>12cm

173 in 1.8 acres (Darkali)

78.8 acres/1.8 acres = 43.77777777777778

43.77777777777778 * 173 (trees) = 7,573.555555555556 (trees if 100% canopy cover)

7573.555555555556 × 0.6956 (69.56%) = 5,268.165244444445 (Trees if 69.56% canopy cover)

i-Tree Study



i-Tree Canopy ring
and radials.pdf

Terms used

DBH: Diameter at breast height which is calculated at 1.5 meter above ground level.

Understory: trees and shrubs ~<12cm diameter stem

Common Name: The usual name by which the tree is identified. Only one is used though there are sometimes several or none.

Scientific name: The scientific name of the tree.

Tamil name: If the local Tamil name is known it has been used if possible.

Stem Diameter:

The stem diameter in cm at 1.5m above ground level. Multi stemmed trees have a stem diameter calculated as per BS:5837, 2012 section 4.6, estimated to the nearest centimeter.

Number of Stems: Used to calculate the stem diameter as stated in the BS:5837, 2012, limited to six.

Status:

Status		
IUCN status	CITES status	Trees that fall under The Scheduled Timber vide Tamil Nadu Forest Act, 1882
* = not evaluated	Appendix II	Forest Department
DD = Data Deficient		
LC = Least concern		
NT = Near threatened		
VU = Vulnerable		
EN = Endangered		
CR = Critically endangered		

References

- Doick, K. J., Neilan, C., Jones, G., Allison, A., McDermott, I., Tipping, A., & Haw, R. (2018). CAVAT (Capital Asset Value for Amenity Trees): valuing amenity trees as public assets. *Arboricultural Journal*, 40(2). <https://doi.org/10.1080/03071375.2018.1454077>
- Everard, M. (2018). **The characteristics, representativeness, function and conservation importance of tropical dry evergreen forest on India's Coromandel Coast.** *Journal of Threatened Taxa*, 10(6). <https://doi.org/10.11609/jott.2807.10.6.11760-11769>

IUCN Red List of Threatened Species:

<https://www.iucnredlist.org/>

CITES: <https://checklist.cites.org/#/en>

BS 5837:2012 Trees in relation to design, demolition and construction. Recommendations.

Melbourne Urban forest strategy: <https://www.melbourne.vic.gov.au/community/greening-the-city/urban-forest/Pages/urban-forest-strategy.aspx>

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Island Lescure

Assessing, Protecting and Planting Trees and Ecosystems
Viluppuram

Summary

I am based in Auroville, India, and offer various tree related advice and solutions with expertise from international experience and education but with local knowledge.

My main services are:

Tree surveys and advice for development projects (preferably prior to construction and ideally to influence the planning stages)

Tree risk assessment surveys/inspections and recommendations (private individuals, schools, commercial centers, hotel grounds etc...)

Urban tree planting schemes and management

Ecological restoration of degraded landscapes with trees planted in logical succession

I can also provide professional tree surveying and management software from Pear Technology, with support

I work in conjunction with a tree surgery company and together we can offer complete tree solutions in the form of pruning, transplanting, removal, access etc...

Please contact me for any further information or clarifications: +91 7598103616 or have a look at our website.

I am always looking for interesting projects regarding anything to do with trees and alternative energies. I am also interested in sustainable ideas relating to agroforestry, permaculture, organic farming and waste reduction/recycling. I think we need major cultural shifts towards a more sustainable society.

Contact

www.linkedin.com/in/islandlesecure
(LinkedIn)
treescapes.in (Company)

Top Skills

Forestry
Trees
Project Planning

Languages

English (Native or Bilingual)
French (Native or Bilingual)

Certifications

C.S. 38
C.S. 39
Duolingo Spanish Fluency: Beginner
(Estimated)
Professional Tree Inspection
Certificate

Publications

The Life of a Tree

Experience

Treescaping India

Director and Consulting Arborist/Tree Consultant/Arboriculturist

January 2017 - Present (5 years)

Auroville, India

Work consists of providing tree consultancy services in the form of:

-surveying, inspecting and providing advice on trees for planning and development projects

-conducting risk assessment surveys to mitigate risks from trees

Auroville Forest Group

Woodland Manager/Forest Steward

2017 - Present (4 years)

India

Involved in ecological restoration through reforestation in association with the Auroville Forest Group.

The work involves:

- Woodland creation and management
- Writing proposals and articles to acquire funds for related projects
- Formulation of guidelines

Island Lescure

Tree Consultant/Arboriculturist

October 2014 - December 2016 (2 years 3 months)

Sheffield, United Kingdom

Work consisted of conducting tree surveys of various types (mainly condition surveys, BS:5837 surveys and risk assessment surveys), inspections, giving advice, preparing management plans for trees or groups of trees etc...

Paul Johnson Tree Services

Team Leader/Arborist

October 2013 - December 2016 (3 years 3 months)

Derbyshire/South Yorkshire

Current work comprises of the formulation of method statements and risk assessments, carrying out tree surveys, visual tree inspections, aerial inspections, dismantles, crown reductions, crown lifting, crown thinning, selective branch removals, vista pruning, felling, training junior staff, maintenance of equipment, quoting, liaising with clients/potential clients and any other requirements that arise. All carried out in accordance with BS:3998

2010, Working at Height Regulations 2005 and other relevant guidelines, acts and regulations.

Island B. Lescure

Self Employed Arborist

July 2013 - October 2014 (1 year 4 months)

Working as a freelance tree surgeon mainly climbing and being foreman on site.

Galloway Tree Services

Sub contracted arborist

March 2011 - July 2013 (2 years 5 months)

Working as a tree surgeon mainly climbing and being foreman on site.

Sheffield Wildlife Trust

Volunteer Land management assistant

December 2011 - May 2013 (1 year 6 months)

Tree and shrub clearance in woodlands, erecting fences(living, wire and organic) including stiles, weed control(on land and in water), making wooden benches, wooden bridge laying, forest management and maintaining paths on reserves and in parks were some of the activities that I was involved in.

Auroville Forest Group

Assistant manager, Researcher

2002 - 2011 (9 years)

Auroville, Tamil Nadu, India

Assistant manager in reforestation project with supervision and participation of the Auroville Forest Group on site (Espace, 3.7 acres). Experimenting with different varieties of drought-resistant shrubs grown under high tension lines to help reduce maintenance in the Auroville forests

TreeCare

Co-Manager/Owner/Arborist

May 2009 - October 2010 (1 year 6 months)

Auroville, India

Arboricultural company in Auroville. Government, municipal, commercial and private jobs undertaken. (Auroville is an international township in South East India)

No company name as all sub-contracted

Tree attachment specialist/Safety coordinator

2009 - 2009 (less than a year)

Elephant Valley Eco-resort, Kodaikanal, India

Built an eco-friendly sustainable tree house.

link: <http://www.dunecogroup.com/our-hotels/elephant-valley/accommodations/tree-house>

Tree essentials, Comprehensive Tree Services and Polaris Tree and Landscape Services

Sub-contracted Arborist

2009 - 2009 (less than a year)

Worked with each company on weekly basis as required by work load.

TreeCare

Founder/Manager/Arborist

October 2006 - December 2008 (2 years 3 months)

Tamil Nadu, India

Founded arboricultural company with two friends in Auroville. Government, municipal, commercial and private jobs undertaken. (Auroville is an international township in South East India)

Project done in collaboration with Petzl and MTANDT

Project writer and Manager

2008 - 2008 (less than a year)

Karnataka, India

Conducted a four day seminar demonstrating uses of climbing equipment on coffee plantations in Karnataka. Project was sponsored by high profile equipment suppliers, aimed at providing full security for climbers pruning tall trees or harvesting pepper from the trees without damaging the vines nor the coffee plantations.

N/A

Project writer and Manager

2008 - 2008 (less than a year)

South East, India

Conducted a four day tree care and climbing workshop at the Auroville Youth Center.

Rammed Earth Alternatives

Construction worker

2008 - 2008 (less than a year)

Matrimandir Gardens

Arborist Apprentice

May 2006 - October 2006 (6 months)

Auroville, India

6 month apprenticeship with a senior arborist at the Matrimandir gardens (park) in Auroville, leading to a temporary caretaker position for 3 months in his absence.

Auroville Planning and Development Council

Representative

2006 - 2006 (less than a year)

Auroville, India

Representative of the Forestry Department in weekly meetings with the Auroville Planning and Development Council.

Innovation Unlimited

Assistant to electronic technician

2005 - 2005 (less than a year)

Auroville, India

Assistant to electronic technician at "Innovation Unlimited", assembling and selling "Zappers" and mini home-made torch-lights.

Self Employed

Builder/Contractor/Construction worker

2003 - 2003 (less than a year)

Auroville, India

Builder/Contractor/Construction worker for private residence using energy saving techniques and local building methods. Including all infrastructure (solar installation and connection to existing wind generated water pump)

Auroville Youth Center

less than a year

Cook

2002 - 2002 (less than a year)

Auroville, India

Catering for up to 100 people at the Auroville Youth Center weekly pizza nights.

Manager

2002 - 2002 (less than a year)

Auroville, India

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Unnamed

Construction worker

2001 - 2001 (less than a year)

Ardeche, France

Construction worker building walls exclusively out of stones following historical method.

Shangrila

Waiter/Kitchen assistant

2001 - 2001 (less than a year)

Ardeche, France

Waiter/Kitchen assistant in a small restaurant for one summer season.

JPL Construction

Construction worker

July 1998 - October 2000 (2 years 4 months)

Auroville Youth Center

Caretaker

1998 - 1998 (less than a year)

Auroville, India

Education

Treelife Training

ABC Awards Level 4 Diploma in Arboriculture, Arboriculture · (2013 - 2014)

Guam Community College

Freshman English, Literature · (1999 - 1999)

Guam Community College

Environmental Biology of Tropical Island Environments, Biology,

General · (1999 - 1999)



Meaning of **understory** in English



understory

noun [C or U] • BIOLOGY, ENVIRONMENT • US specialized (UK **understorey**)

US /'ʌn.dəˌstɔːr.i/ UK /'ʌn.dəˌstɔː.ri/



a layer of plants and bushes that grows under the canopy of a forest (= the branches and leaves that spread out at the top of a group of trees forming a type of roof):

- *There are many old plants, as well as a thriving understory of seedlings.*
- *The article examines the effects of surface fires on understory and insectivorous birds in central Brazilian Amazonia.*

– SMART Vocabulary: related words and phrases

Forestry

afforestation

agroforestry

arborist

brush

deforest

deforestation

disafforest

flich

logging

lop sth off

lumberjack

lumberman

old growth

ranger



[slash-and-burn](#)

[the treeline](#)

[tree-lined](#)

[woodv](#)

[Contents](#)

[To top](#)

(Definition of *understory* from the [Cambridge Advanced Learner's Dictionary & Thesaurus](#) © Cambridge University Press)

EXAMPLES of **understory**

understory

So the low-intensity fires would burn in the *understory* and commonly would scar the base of a tree.

From [NPR](#)



Thick bark protects it from burning in lightning-caused fires, which open cones and clear the *understory*, allowing saplings to find light and prosper.

From [NPR](#)



That is, they didn't burn frequently with *understory* fires.

From [NPR](#)



It blocks out all the light so there is no *understory*, and it's pulling down all these trees.

From [CBS Local](#)



And in that recording, you could hear there was a great tinamou, which is an *understory* bird species.

From [NPR](#)



Its floor has a very irregular topography that betrays a former badland, with the *understory* of long grass now partially masking old erosional pedestals.

From the [Cambridge English Corpus](#)



In several places the trees and their *understory* conceal the irregular floor of old tepetate badlands.

From the [Cambridge English Corpus](#)





From [Project Gutenberg](#)



The highest population densities were in pinyon-juniper woodland having an *understory* of mixed shrubs.

From [Project Gutenberg](#)



It seemed to prefer secondary forest that had some undergrowth and was invariably flushed from the *understory*.

From [Project Gutenberg](#)



Not until an *understory* of grasses was established did a population of voles appear on such areas.

From [Project Gutenberg](#)



Vegetation was pinyon-juniper woodland with an *understory* of mixed shrubs.

From [Project Gutenberg](#)



One shows associations of dominant overstory and *understory* plants.

From [Project Gutenberg](#)



This babbler inhabits the *understory* of primary forest, and occasionally is seen in secondary forest scrub.

From [Project Gutenberg](#)



It may also shelter an *understory* of young spruce and fir that could one day replace it.

From [Project Gutenberg](#)



These examples are from corpora and from sources on the web. Any opinions in the examples do not represent the opinion of the Cambridge Dictionary editors or of Cambridge University Press or its licensors.

What is the pronunciation of *understory*? >

Browse

[understatement](#)

[understating](#)

[understood](#)

[understorey](#)

understory

[understudied](#)





Auroville Greenwork in the larger context of Bioregional Conservation

Auroville and the TDEF

Auroville is situated in the coastal region of south-eastern peninsular India which has a vegetation type defined as Tropical Dry Evergreen Forest – TDEF (Champion and Seth 1968). It has a narrow range, approximately 500 km long running north to south, and with a width no wider than 50km. In 2002 it was estimated that only 4% of this TDEF range was under forest cover, but the results of field studies carried out showed that only 5% of the remaining forest was actually pristine TDEF, with the other 95 % being highly disturbed, with a classification of degraded scrub. Therefore, it would be fair to state that only 0.2% of this range now exists as an ecosystem, and consequently making it a very rare forest type in India, if not the rarest due to its anyway limited range. The circumstances which have left this forest system in a fragile state are many, but mainly the high concentration of human population in this coastal belt and the impact that has on the environment.





The TDEF, like most tropical forests, contain large amounts of species and biodiversity, it is estimated that up to a 1000 different plant species make this forest type their home with 300 of these being woody. The forest type has adapted to being in cyclonic region, with a relative low canopy of 8 to 10 metres with the occasional emergent tree. The canopy is rich with inter linked lianas and the forest floor is a rich layer of biomass that is effectively recycled by plant feeder roots in the top 1cm of soil. The TDEF, like classical tropical forests hold its nutrient wealth in the canopy, thus once cut the soil becomes impoverished and quickly leached by the region's intense monsoon rains. A forest type is not only the flora, the plants that are present within the ecosystem, but also the fauna, the mammals, birds, reptiles and insects that survive and thrive in this habitat. In the past leopards and elephant herds would have roamed these regions, perhaps even tigers, but today the TDEF is home to smaller mammals, the mongoose, porcupine, Indian civet cat, jungle cat, and many more including the fruit bat which is an important vector for spreading seeds of the forest. The TDEF also is home to a large population of reptiles and a myriad of bird species that gain protection from the dense habitat the TDEF offers, but it also gives place for the insects to thrive, the pollinators, which are now proving to be key elements of any environment where be natural plant areas or manmade ones such as agriculture.



The Sacred Groves

The last remnants of the TDEF, which indicate a primary forest, exist in sacred groves that are found around temples, generally of the deity Ayyaner but not exclusively. These shrines situated outside villages and the with the religious cultural belief system that the god enjoyed hunting and being in the forest at night meant that pockets of forest around the temple were kept, protected and held sacred. These groves vary in size,





sometimes less than hectare but others up to 10 hectares, during our studies in the late 90's up 75 sacred groves were analysed and researched, and thus became the bio-resource, both in knowledge and seed source for the restoration and re-establishment of the TDEF within the Auroville community. This effort became the main focus of our environmental work here in Auroville, an effort to established protected pockets of this endangered forest type and the rich heritage of its biodiversity held within it.

Auroville's Greenwork

Auroville came into being in 1968, the plateau that was to become the city the earth needs was an eroded, barren landscape devoid of trees, other than some palmyras and a few banyans. The initial challenge for the community members was to create a hospitable environment to live and work in, at that point there was no large environmental wisdom or vision, it was basic human necessity, that water and shade were required and the effort started. Soil and water conservation measures were implemented and trees were planted in a passionate, though albeit haphazard way. As the decades progressed there soon emerged an Auroville forest, which was a mishmash of exotic and native species, the hardy ones that could survive those initial tough pioneer conditions. It was only in the mid to late 90's after the in-depth study of the indigenous vegetation, that the TDEF was introduced en masse within Auroville, utilising the shade and biomass the initial pioneer species offer. This became the single planting focus of the group involved in coordinating environmental work which has accumulated today in the planting of half a million TDEF saplings.

It is now apparent that the Auroville plateau contains the largest contiguous area of TDEF, though it is not old growth but a young forest, it is starting to mature, and to regenerate. The regenerating factor is a good indicator of protection, and also that from a limited genetic stock of



plants from our region, it is not only surviving but flourishing.

The status of the TDEF

Putting the Auroville area of TDEF into context with the whole zone doesn't really indicate the present day status of the forest. For this understanding there is presently a research project underway which aims at understanding what is the current status of TDEF. Part of this entailed revisiting the sacred groves that were studied 25 years ago with the view of doing a comparative study. Though this study is not complete and published, certain conclusions are clear; the nature of a sacred grove and their land status means that these areas have not increased in area, that about 25% of the groves are in fairly static state, well protected and have maintained a similar canopy cover, the remaining 75% it was observed that there is some level of disturbance which has led to a reduction in their canopy cover. From these findings it can be said that the status of the TDEF forest reference its spatial distribution across its range is still in decline.



Future partnership

As Auroville is now holding and protecting rare biodiversity material in its forests it means that this heritage is not lost. There is a clear will to understand the dynamics of how this status of the TDEF can not only be held in check but improved. This could mean using the seeds from plants within Auroville to create seedlings which can be spread back into the bioregion. Projects have already started to do this on a small scale and there is a will to now give back to the bioregion and thus not only protect the TDEF but to help it thrive and grow.



Prepared by Glenn Baldwin - Auroville Forest Group 14/12/2021

Auroville Greenwork in the larger context of Bioregional Conservation

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It is now apparent that the Auroville plateau contains the largest contiguous area of TDEF, though it is not old growth but a young forest, it is starting to mature, and regenerate. The regenerating factor is a

good indicator of protection, and also that from a quite limited genetic stock of plants from our region, it is not only surviving but flourishing. Putting this into context with the whole TDEF area though, it doesn't really indicate the present-day status of the forest. For this understanding there is presently a research project underway which aims at understanding what is the current status of TDEF. Part of this entailed revisiting the sacred groves that were studied 25 years ago with the view of doing a comparative study. Though this study is not complete and published, certain conclusions are clear; the nature of a sacred grove and their land status means that these areas have not increased in area, that about 25% of the groves are in fairly static state, well protected and have maintained a similar canopy cover, the remaining 75% it was observed that there is some level of disturbance which has led to a reduction in their canopy cover. From these findings it can be said that the status of the TDEF forest reference its spatial distribution across its range is still in decline.

As Auroville is now holding and protecting rare biodiversity material in its forests it means that this heritage is not lost. There is a clear will to understand the dynamics of how this status of the TDEF can not only be held in check but improved. This could mean using the seeds from plants within Auroville to create seedlings which can be spread back into the bioregion. Projects have already started to do this on a small scale and there is a will to now give back to the bioregion and thus not only protect the TDEF but to help it thrive and grow.

Prepared by Glenn Baldwin – Auroville Forest Group 14/12/2021

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INDUSTRIAL ZONE

INTERNATIONAL ZONE

**Alternative crown road
proposed by Dargali
that remains within
the 30m of ROW**

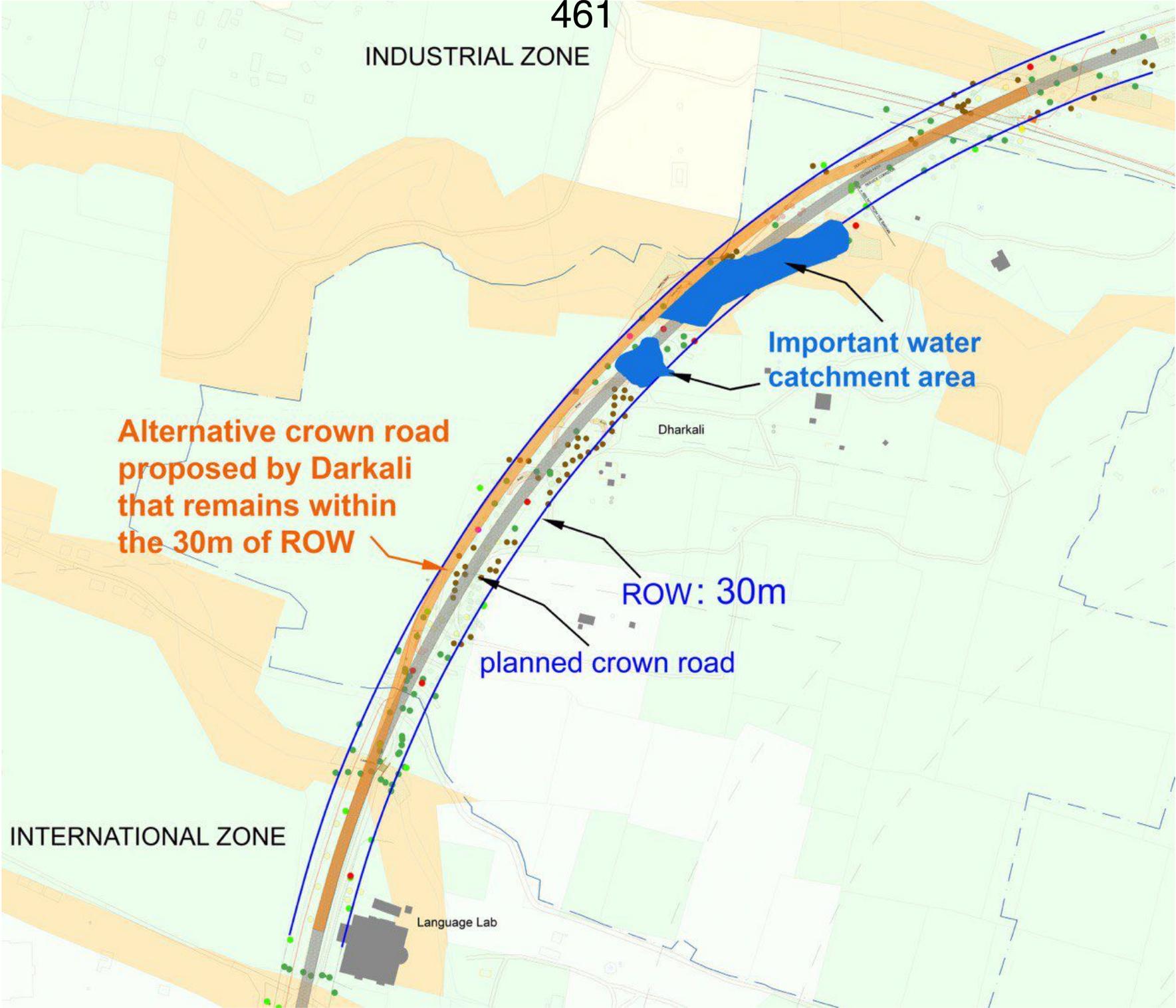
**Important water
catchment area**

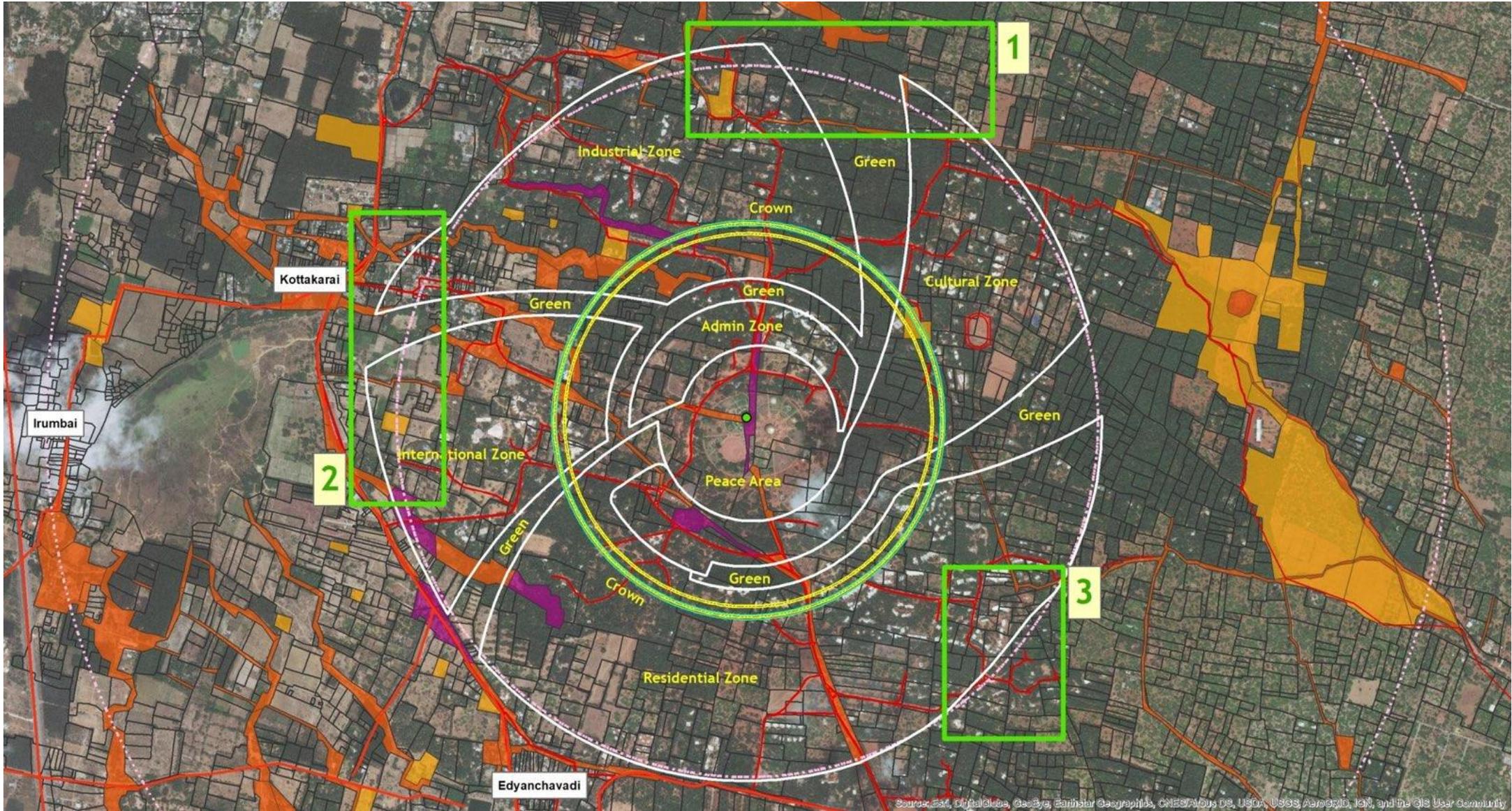
Dharkali

ROW: 30m

planned crown road

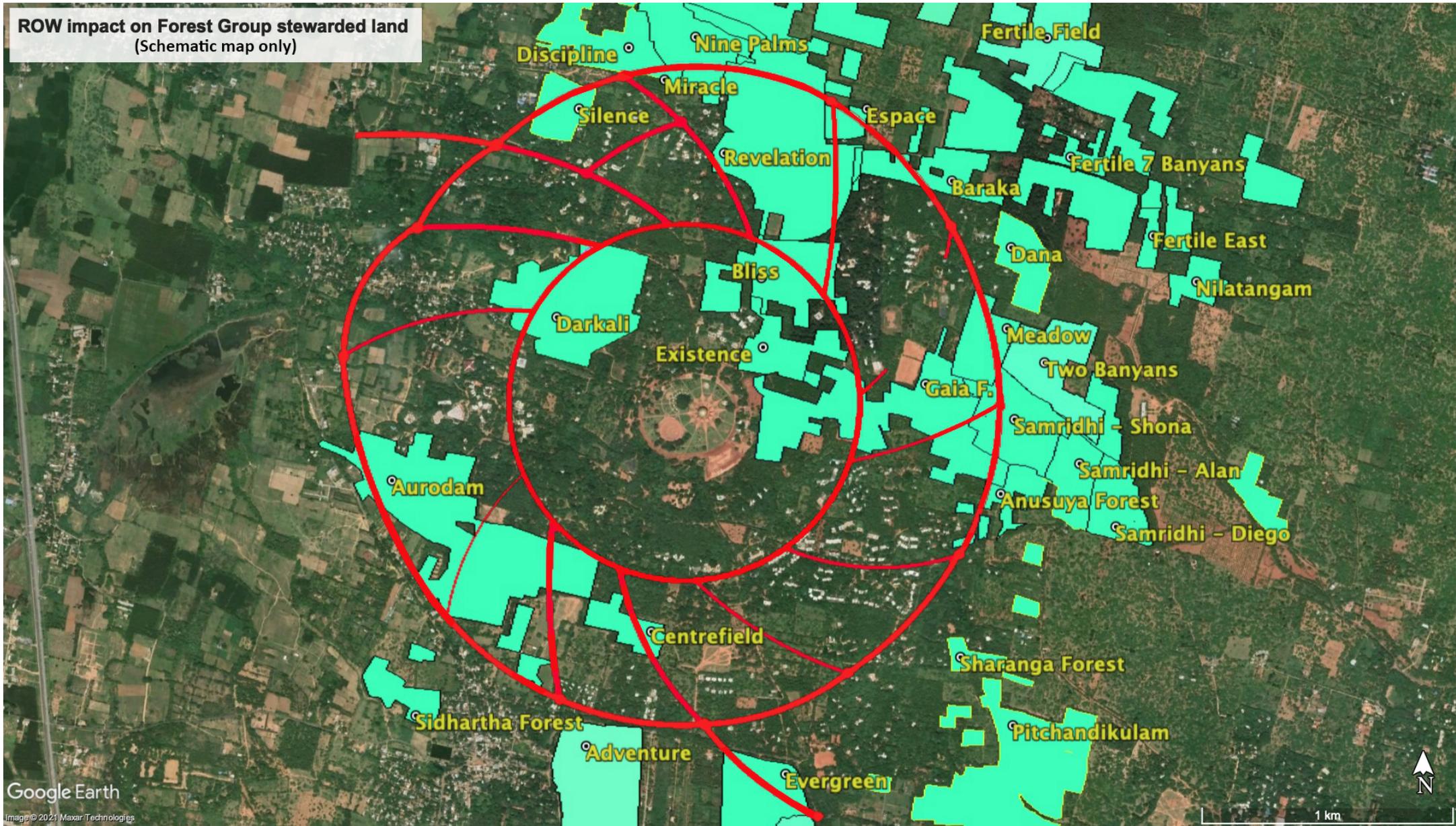
Language Lab



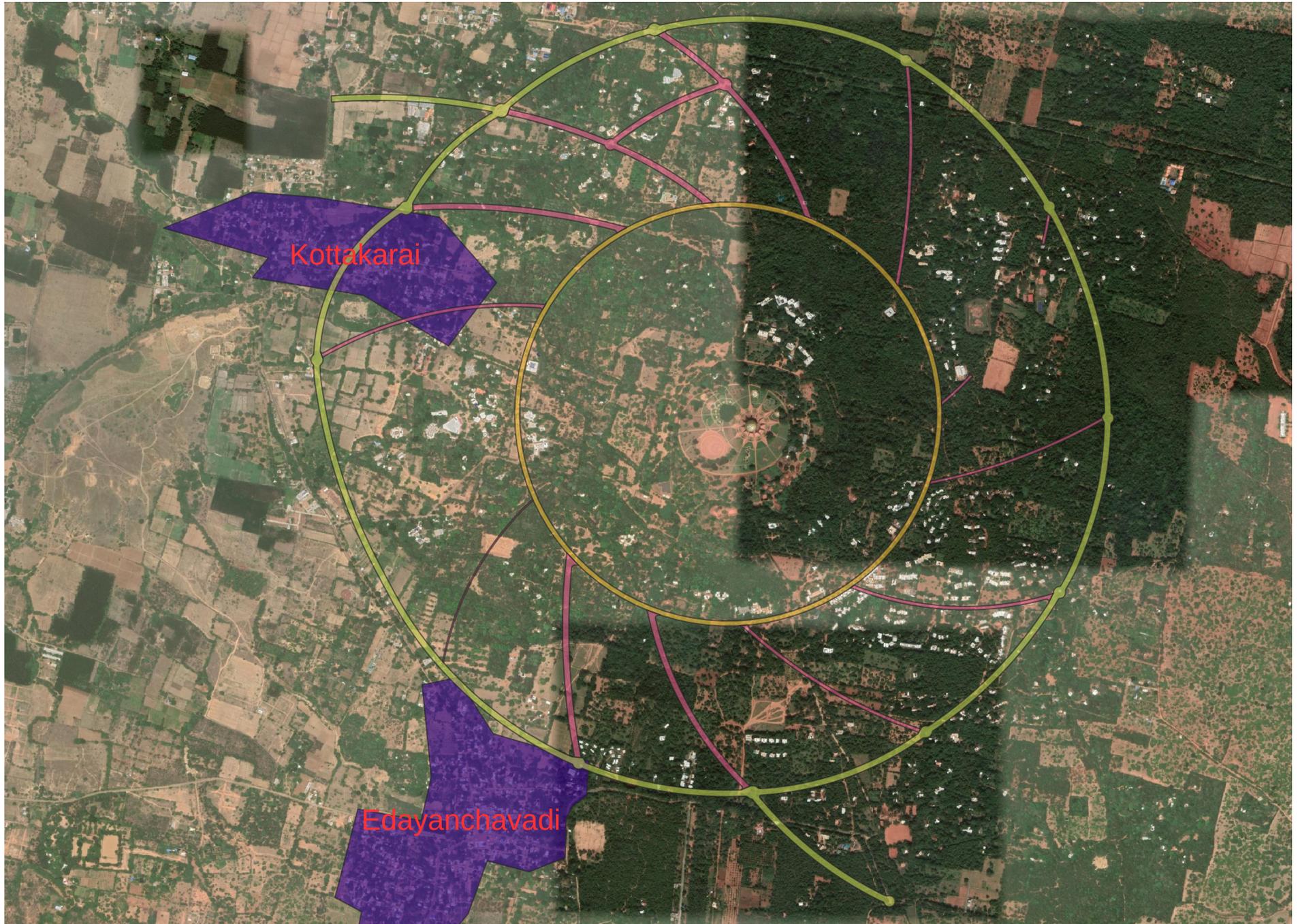
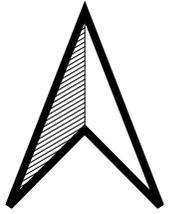


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ROW impact on Forest Group stewarded land
(Schematic map only)



464 Outer ring road - impact on villages

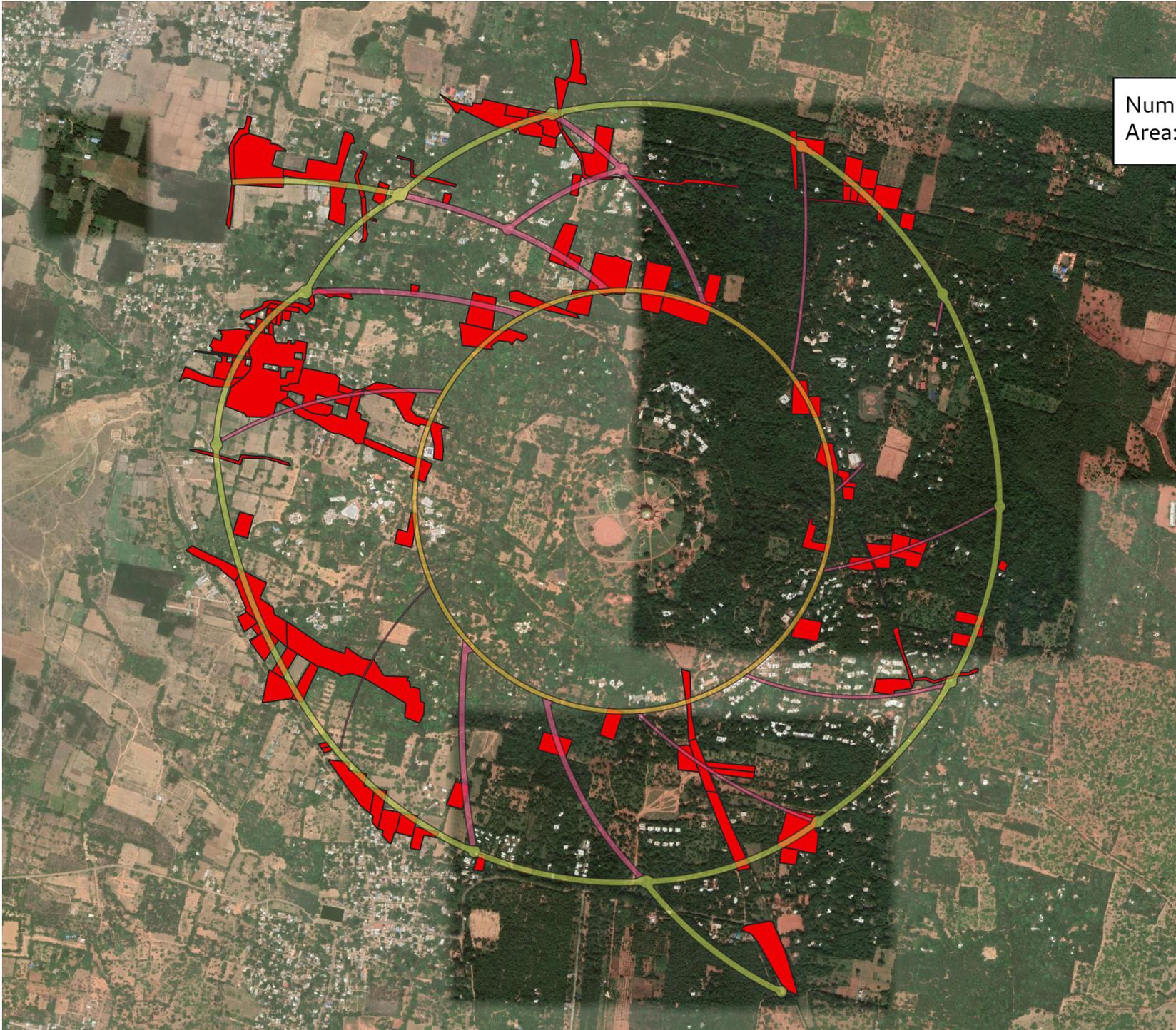


0 200 400 600 800 1,000 m



Non-Auroville Foundation plots on the RoW

465

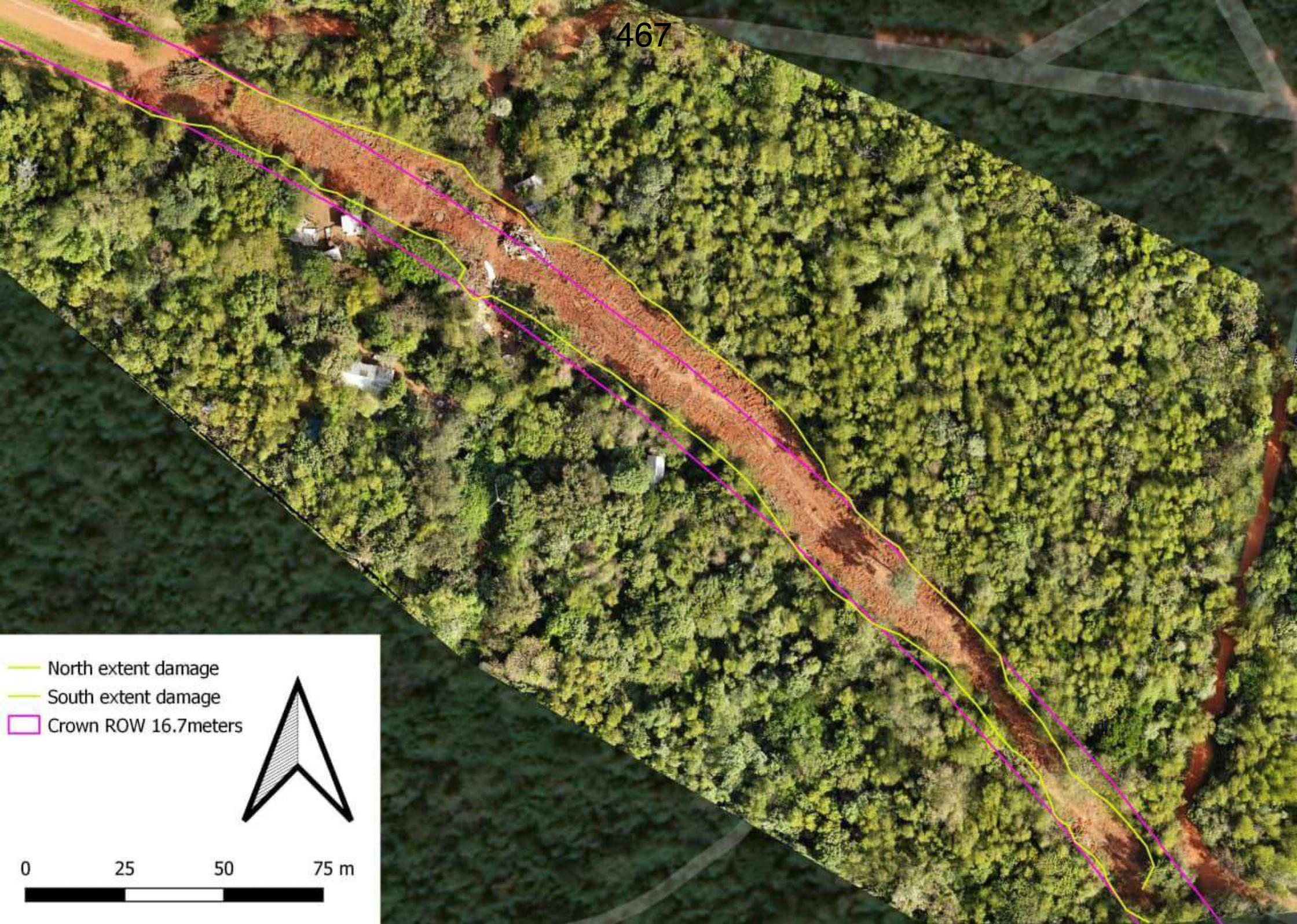


Number of plots: 129
Area: ~ 631798 sq. m (~ 156 acres)

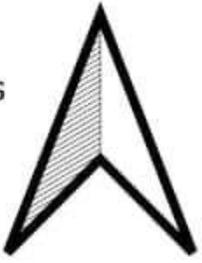
466



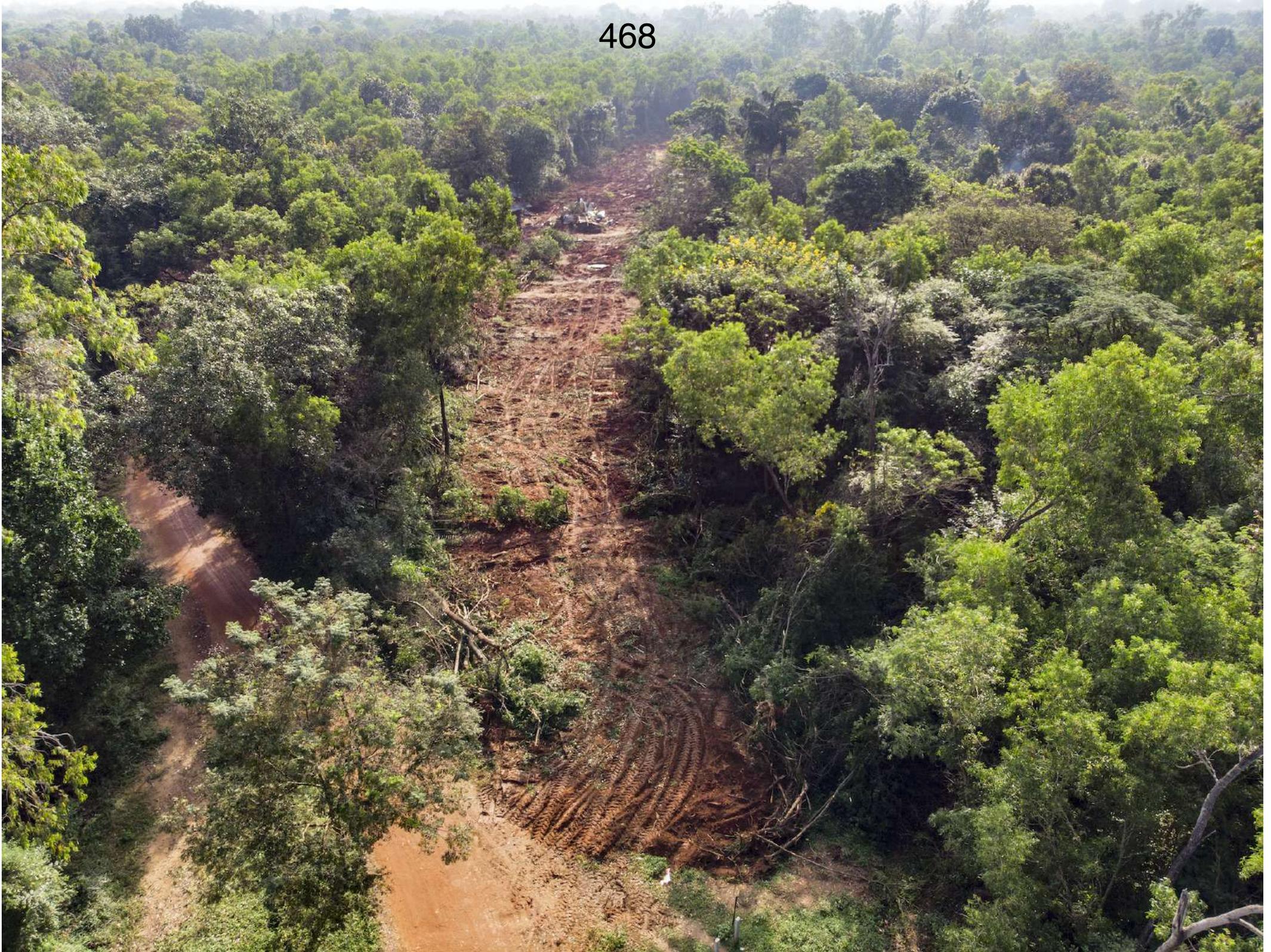
467



- North extent damage
- South extent damage
- Crown ROW 16.7meters



468









472



473



474







477





479







TDC
CROWN ROAD

DARKALI
PROPOSED
CROWN ROAD







To: Respected Members of the Governing Board

11 December 2021

Like so many friends and well-wishers of Auroville, we have been pained by the polarization that has come into the Auroville Community, and it is imperative that we as a Council stay above such divisions. We understand the anger over the use of the police, and we understand the frustration of those who want to see the agreed upon development plan move forward. For sure, there have been missteps on all sides, but we are advising everyone not to linger in the anger and blame, but to work individually to calm emotions, step down and invoke the Mother. By allowing the vilification of the “other” we are working against the Mother’s ideal of human unity. This will not lead to a good result. To help with a cooling off period and to begin rebuilding trust, we would like to offer, in a spirit of goodwill for all, the following recommendations for everyone’s consideration, and assure you of our readiness to help in any way we can:

1. Let all sides *refrain from bringing in external agencies* to resolve Auroville’s internal issues, because it is not only an admission of failure, which will leave deep scars that will divide the community for a long time to come; it will also vitiate the atmosphere that might otherwise still bring about an internal resolution of issues.
2. In particular, to resolve disagreements among Aurovilians, we advise *not to have recourse to call agencies of the state such as police or courts or to seek warrants*, since that is explicitly against Mother’s will expressed on several occasions — “No army, no police” in particular.
3. We call on all to remember that in Mother’s own saying, *the manner in which Auroville is built is as important*, possibly more, than the outcome: “It’s not when Auroville has been completed: it’s the nations’ collaboration in creating something [that matters] – but creating something founded on the Truth instead of a rivalry in Falsehood’s creation. [What matters] is not when Auroville is ready – when Auroville is ready, it will be one city among all other cities and it’s only its own capacity of truth that will have power, but that ... remains to be seen.” (21 September 1966) Therefore it is incumbent on all of us to help towards this “foundation on the Truth” and trust right now, not in a distant future.
4. We call for an actual *practice of inclusiveness*: differing views and perspectives are unavoidable, yet Auroville’s challenge is to bring them together and find ways to harmonize them. In particular: (1) Many experts in Auroville have done outstanding work in many fields; this expertise and experience must be fully utilized in the planning of a city; (2) A first step could be to identify common ground, such as any area of the development of the future city that stake-holders and experts will all agree on, and focus on that initially, rather than on contending issues; (3) Given recent developments, and Auroville’s outstanding work in eco-restoration for decades, which has earned it worldwide respect, a thorough environmental audit, by respected and independent experts, of current and future plans seems an urgent necessity.

Members of the International Advisory Council

Gabi Gillessen, Michel Danino, Hashmukh P. Rama, David Frawley, Dena Merriam

IAC calls for environmental audit of Auroville's current, future plans

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PUDUCHERRY: The members of the International Advisory Council (IAC) of the Auroville Foundation have urged the governing board of the foundation to conduct a thorough environmental audit by independent experts of current and future plans of the foundation.

The appeal came in the wake of protests by a section of residents of Auroville against a road project by the foundation by clearing trees and residential and community buildings as per the master plan envisaged in 1999.

"Given recent developments, and Auroville's outstanding work in eco-restoration for decades, which has earned it worldwide respect, a thorough environmental audit, by respected and independent experts, of current and future plans seem an urgent necessity," said the IAC members

in a letter addressed to the members of the governing board.

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They urged the board to utilise the expertise and experience of many experts in Auroville in the planning of the township. "A first step could be to identify common ground, such as any area of the development of the future city that stakeholders and

experts will all agree on, and focus on that initially, rather than on contending issues," they said.

They called for an actual practice of inclusiveness. "...differing views and perspectives are unavoidable, yet Auroville's challenge is to bring them together and find ways to harmonise them," they said.

Quoting Mirra Alfassa, fondly revered as the Mother and spiritual collaborator of revolutionary freedom fighter turned philosopher Sri Aurobindo, they said, ", the manner in which Auroville is built is as important, possibly more, than the outcome. It's not when Auroville has been completed: it's the nations' collaboration in creating something (that matters) – but creating something founded on the Truth instead of a rivalry in Falsehood's creation. (What matters) is not when Auroville is ready – when Auroville is ready, it will be one city among all other cities and it's only its own capacity of truth that will have power, but that ...remains to be seen. (September 21, 1966). Therefore, it is incumbent on all of us to help towards this 'foundation on the Truth' and trust right now, not in a distant future".

They advised all sides to refrain from bringing in external agencies to resolve Auroville's internal issues. "...because it is not only an admission of failure, which will leave deep scars that will divide the community for a long time to come; it will also vitiate the atmosphere that might otherwise still bring about an internal resolution of issues," they said.

"...to resolve disagreements among Aurovilians, we advise not to have recourse to call agencies of the state such as police or courts or to seek warrants, since that is explicitly against Mother's will expressed on several occasions — “No army, no police” in particular," they said.

Expressing deep pain by the polarisation in the community, they said they understood the 'anger over the use of the police, and the frustration of those who want to see the agreed upon development plan move forward'.

"For sure, there have been missteps on all sides, but we are advising everyone not to linger in the anger and blame, but to work individually to calm emotions, step down and invoke the Mother. By allowing the vilification of the 'other', we are working against the Mother's ideal of human unity. This will not lead to a good result," they said.

IAC consists of not more than five members, nominated by the Unesco unit of the human resource management ministry, who in its opinion are devoted to the ideals of human unity, peace and progress. The present members are European Union of Yoga president Gabi Gillessen, IIT-Gandhinagar guest faculty Michel Danino, Auro University, Surat, founder and chancellor Hasmukh P Rama, American Hindu scholar David Frawley and Global Peace Initiative for Women founder and coordinator Dena Merriam.