



# NSC Certified Respondent Level 4– Road Arboriculture and Crisis Reduction

By  
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Proposal for NSC to ensure  
transformative  
implementation of the  
NSSR RS programme

# NSSR Themes – Quality Promotion driving CRM

- **Target group:** The NSSR Themes Quality Promotion insight is targeted towards a new concept **National Safety Social Responsibility vertical** to drive (a) predictive, (b) open-survey & (c) feedback... learning & analytics related quality promotion in or for enveloping ecosystems.
- The interested parties or stakeholders of these enveloping ecosystems being the National Safety Council (NSC), BBMP Roads Infrastructure-Projects, BBMP Traffic Engineering, BESCOM, BWSSB, Healthcare Providers, Medical Supplies Providers, Civic Amenity Providers, Banking institutions, Educational institutions, Corporate commuters, automobile dealers and manufacturers, IWST, KSFES (Karnataka State Fire and Emergency Services) etc

QO enabling CRM

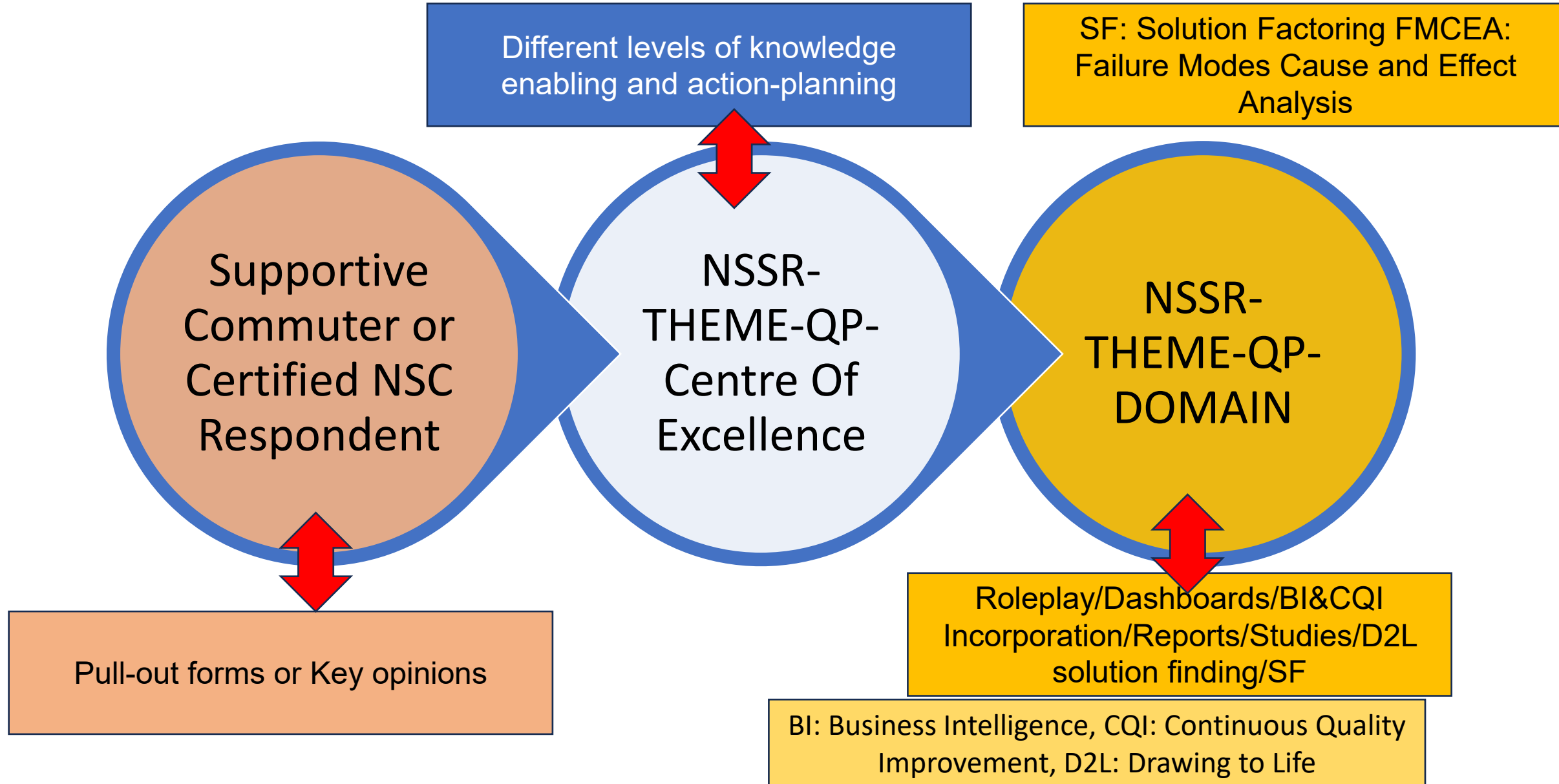
Building Safety.

Road Safety

**Safe and  
Sustainable  
Commuting**

BBMP: Bruhat Bengaluru Mahanagara Palike  
BESCOM: Bengaluru Electricity Supply Company Ltd  
BWSSB: Bengaluru Water Supply and Sewerage Board

# Response a for NSSR THEME



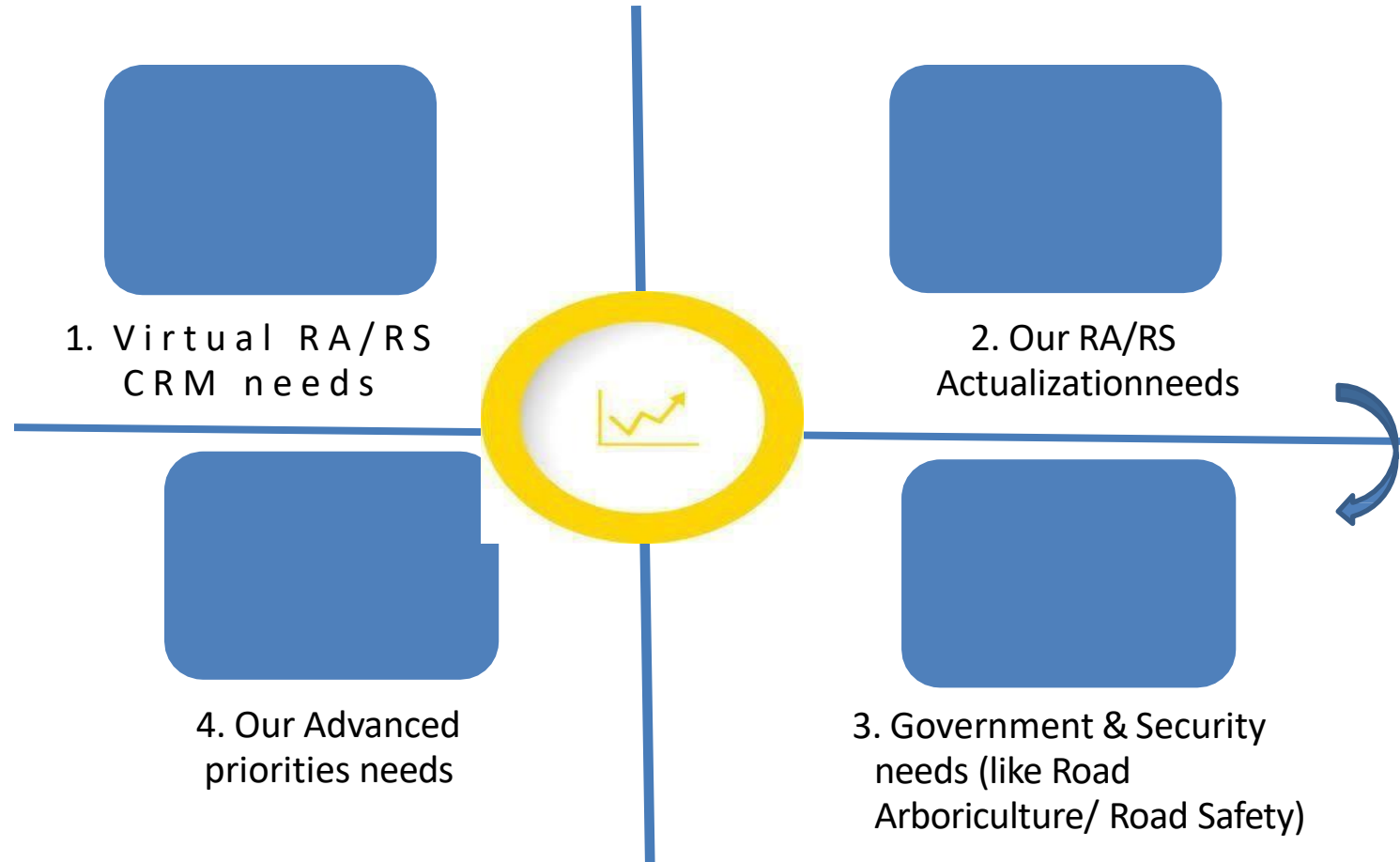




## NSC Certified Respondent Level 4 – Road Arboriculture and Crisis Reduction

# Road Arboriculture and Crisis Reduction

- **Road Arboriculture related trees on being cut down or felled, impact our road safety.** To mitigate this impact, we review the Behavior Model and CRM influencing tree conservation or environment management



# Road Arboriculture and Crisis Reduction

- The Government of India has often stated that forests and green environments influence climate change. The other crisis is that of illegal cutting of road arboriculture related (in short mainline) trees grown by the government or indigenously.
- It is important to help this crisis reduction. Thus to bring about foreseeable synergy into the “need to protect mainline trees” versus “the systems that are implemented to support their growth”, it may be important to conceptualize what is called “expert tree conservation and crisis control” for times unforeseen.

Tree cutting impacts  
Road arboriculture,  
each tree contributes  
to our air quality like  
drops of water in a  
sea/ocean



EXPERT  
SYSTEM

We require Road Arboriculture Crisis Reduction for  
trees classified as

*Mainline*

Resources

# Road Arboriculture and Crisis Reduction

- Expert provisioning and virtual CRM can make it simpler to identify the tangible correlation between road arboriculture versus the crisis reduction enabled to improve road safety. This expert provisioning plus virtual CRM can record, evaluate, survey and collect information about concerning road arboriculture trees via an innovative Channel Building, where this new Channel Building will first help a conservator or grower to categorize trees along a road or road system or route based on a RA/RS Tree-management index CRITERIA, where the index can be simply (1), (2), (3), (4) or combinations of them
- **(1) TMI1:** could stand for this tree is a **low priority for virtual RA/RS CRM needs** (with an indication of the Foreseeable need = )
- **(2) TMI2:** could stand for this tree is a **medium priority for RA/RS actualization needs** (with an indication of the Business need = )
- **(3) TMI3:** could stand for this tree is a **high priority for government and security needs or RA/RS needs** (with an indication of the Specific need = )
- **(4) TMI4:** could stand for this tree is an **advanced priority for specific needs** (like air quality, road safety, with an indication of the Priority need = )

# Road Arboriculture and Crisis Reduction

- This Channel Building will thereon help the government and tree conservation communities “insure” and “mitigate” the issue of cutting down trees illegally or for urbanization. Saved lifetimes are more helpful than felled lifetimes.
- The introspective solution being that if conservators or growers have a RA/RS Tree-management index that includes **TMI3 or TMI4** (which will most commonly be so), then it will be necessary for the government, tree conservation communities, grower networks and other environment protection networks to incorporate special provisions or schemes that could
- **1. Protect investment via Tree property insurance**
- **2. Help RA/RS related tree conservation via crisis reduction**
- **3. Provide and utilize virtual CRM schemes to help interested parties grow and protect mainline trees that affect priority based or advanced priority based road arboriculture, community and ecosystem development**
- **3. Manage any Illegal, Quick or Priority based cutting of trees by RA/RS Tree management index based checks, incidence escalation or mitigation.** The points 1 to 3 are important to ensure that issues (like resources crunch to grow or support RA/RS specific planted trees, limited power to stop cutting of trees, unregulated cutting down of trees leading to road safety issues and tree resource depletion) are managed.

Tree cutting depletes  
drops from a fulfilling  
environment

Road Arboriculture and  
Crisis  
Reduction





# Road Arboriculture and Crisis Reduction



- **What is Tree resource depletion?**

Global warming, climate change, destroying of forests & trees and population growth has depleted and will deplete the natural and man-made resources important for man's existence. For air quality, health, wellness, road safety and green environments, we can say that we will need to incorporate systems to prevent tree **resource depletion (that is as this causes a risk to existence or impacted arboriculture or environment)**, where a RA/RS Tree Management Depletion Quotient (TMQ) will indicate as to whether the tree management level is satisfactory, or low, or extremely low or more of a crisis for road safety.

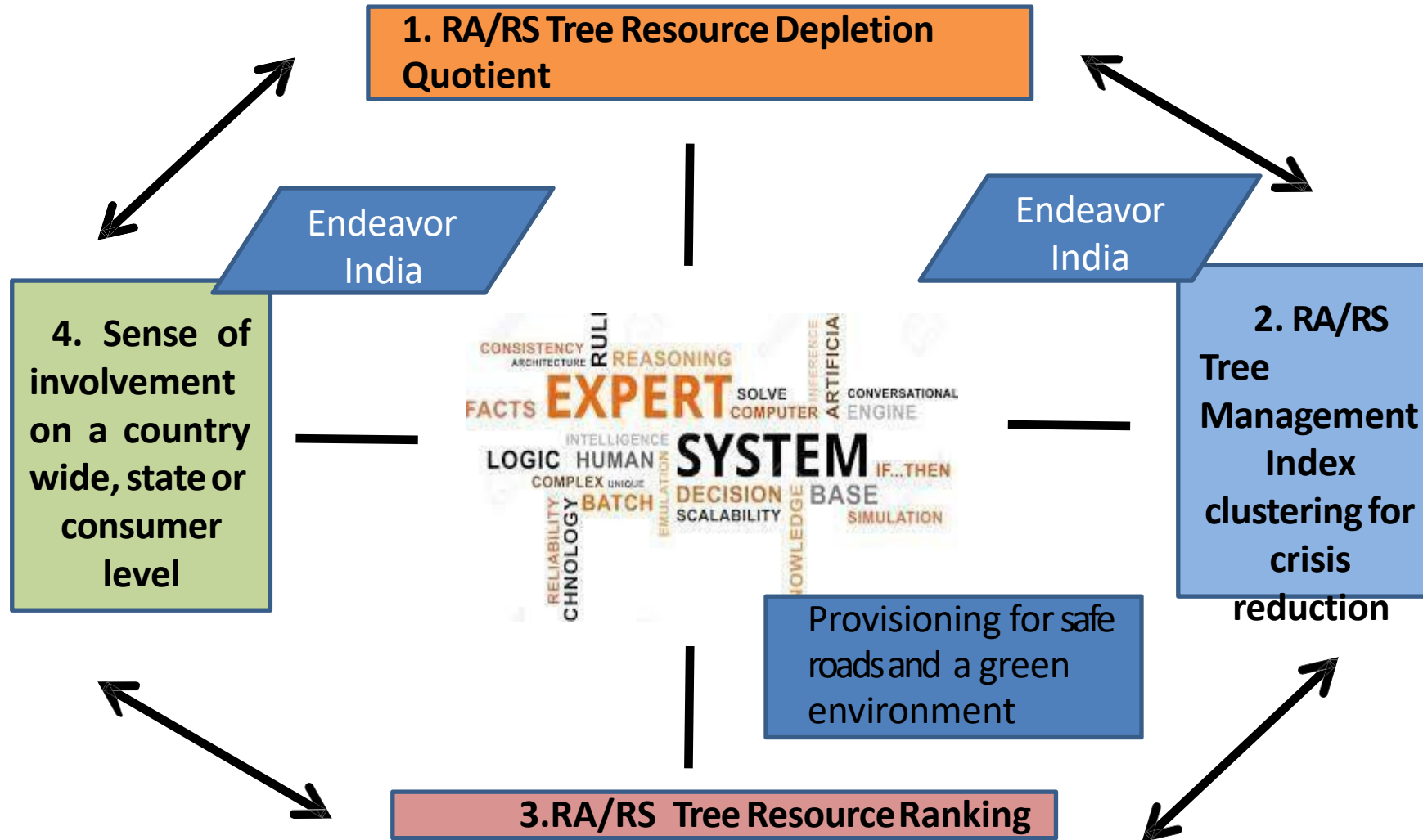
Today we have no **“Expert provisioning and virtual CRM system”** that can importantly survey or provide details on tree **resource depletion**, where the expert system and virtual CRM **helps develop/conserves/ protect environments with provisioning for what we call as space reclamation, utilization or consumption**. The provisioning may then help act to prevent any oversight at (PAN India to State to Grower levels) as protection, conservation or utilization are dependent on our synergetic sense of involvement (or virtual CRM).

# Road Arboriculture and Crisis Reduction



- As a country, we may need to build 'safe roads and **green environments**' that can help tide over adverse climate change related threats on a country wide or state specific basis. Each road safety department, arboriculturist or grower's involvement is important too.
- This need to build 'safe roads and **green environments**' must flow down as a Tree Resource Planning (TRP) requirement to tree conservation communities, arboriculture & grower networks and other systems involved in growing, sales or remedial planning, where this mechanism can help 'tree resource' ranking for safe road and green environments.
- The '**tree resource**' ranking can decide as to what crisis reduction, checks and controls need to fall in place, apart from the 'RA/RS Tree Management Index (TMI)' and 'RA/RS Tree Management Depletion Quotient (TMQ)' for lifetimes ahead

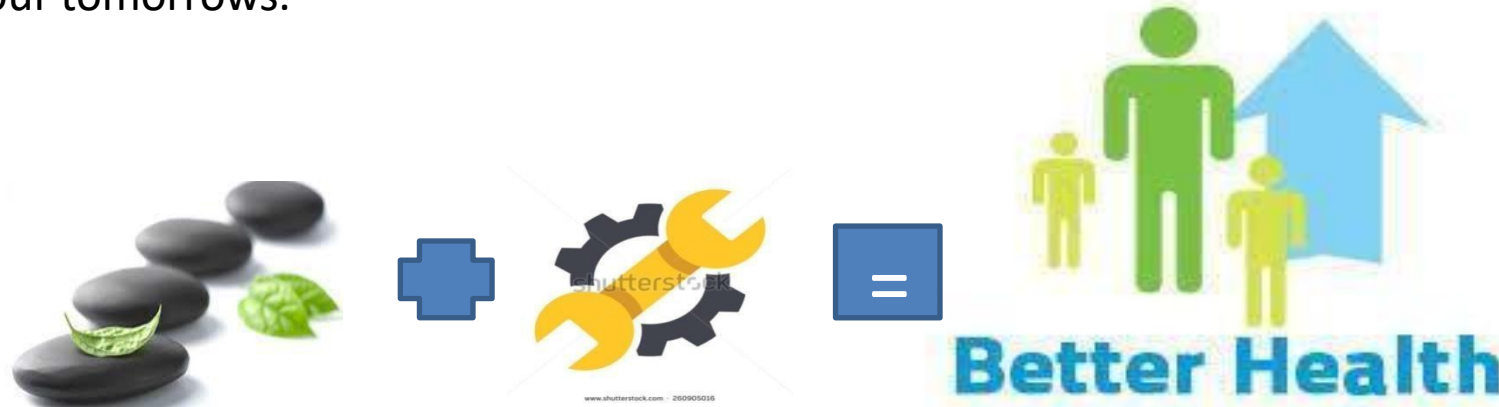
# Road Arboriculture and Crisis Reduction



# Road Arboriculture and Crisis Reduction

Nature has many roles to play. It is not proactive for us to avoid introspecting how climate change is going to road safety, or could affect demand/supply networks and factories making drugs, medicines and formulations, where production “whether autonomic or not” is not yet remedial. The underlining vision does not fortify the path to a healthier life, in every day interests and/or in unforeseen incidence or disaster afflicted scenarios.

We at AOEC envision that steps and tools for better health are Involvements of conviction that may help our tomorrows.



# Road Arboriculture and Crisis Reduction

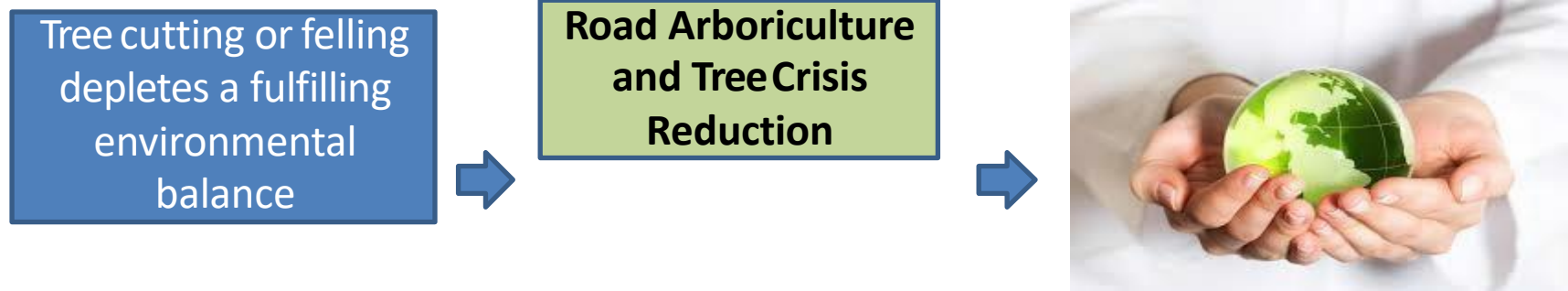
**Our guided methodologies**

The following tabulation will remain common for the crisis reduction but the details or guidance will differ for each road arboriculture plant/tree/product

Steps	Guided methodologies
Crisis reduction for the Seed to productization lifecycle	AOEC solutions
Sensor controlled network	AOEC solutions
Crisis reduction for Demand/supply systems	AOEC solutions
Contingency Plan	AOEC solutions
Risk Mitigation Plan	AOEC solutions
Fencing System and Remote Management	AOEC solutions



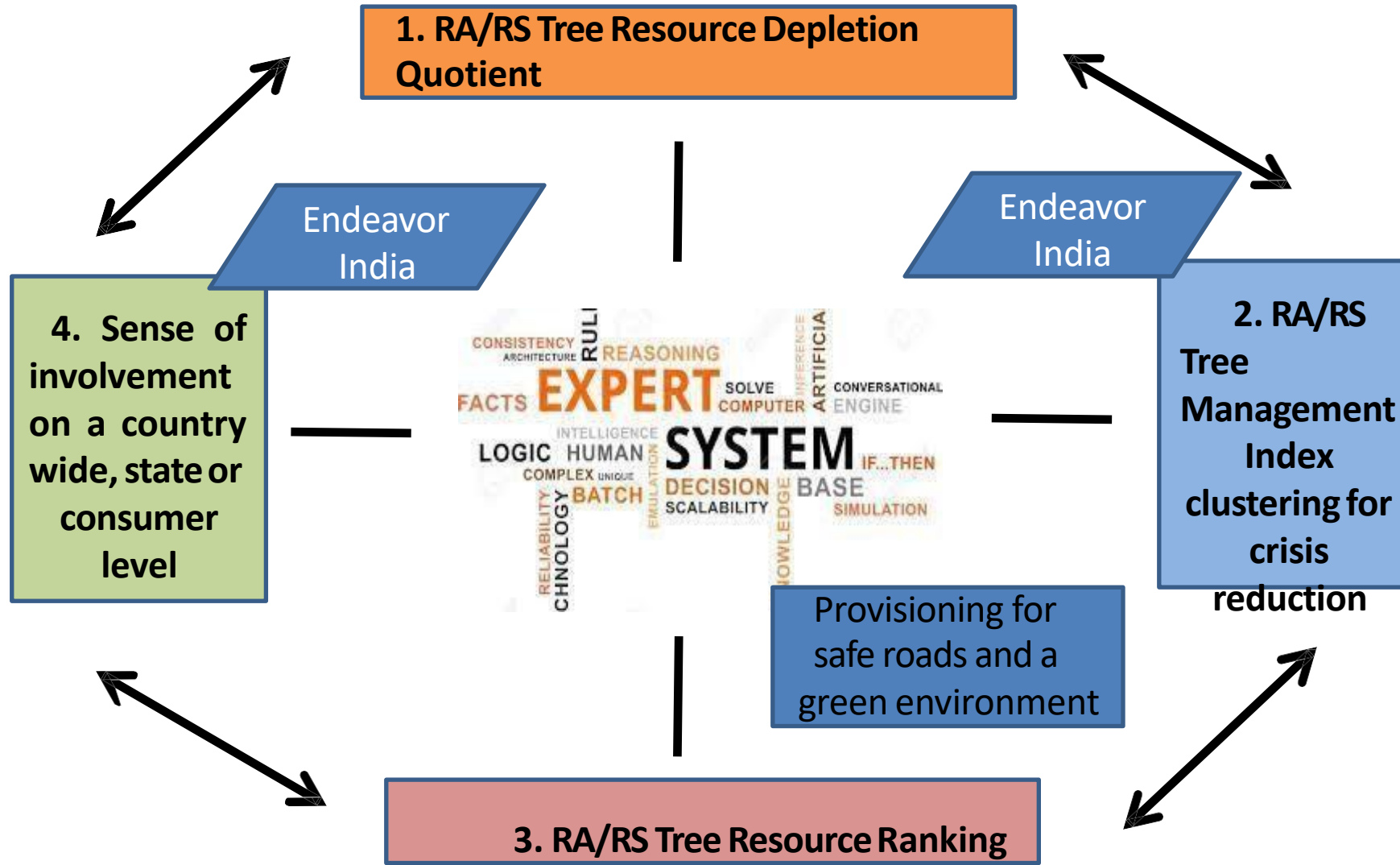
# Road Arboriculture and Crisis Reduction



- Ask for our NEXT Steps to know more about the crisis reduction proposal.
- **You can refer to our documentation on Incidence Escalation or Mitigation to help reduce the issue of cutting down, felling or theft of trees.**
- **You can refer to our documentation on RA/RS enabling Census and Self-corrective Analysis for safe roads and green environments.**
- You can call us on +91 9342867666 or email us on [venkataoec@gmail.com](mailto:venkataoec@gmail.com)

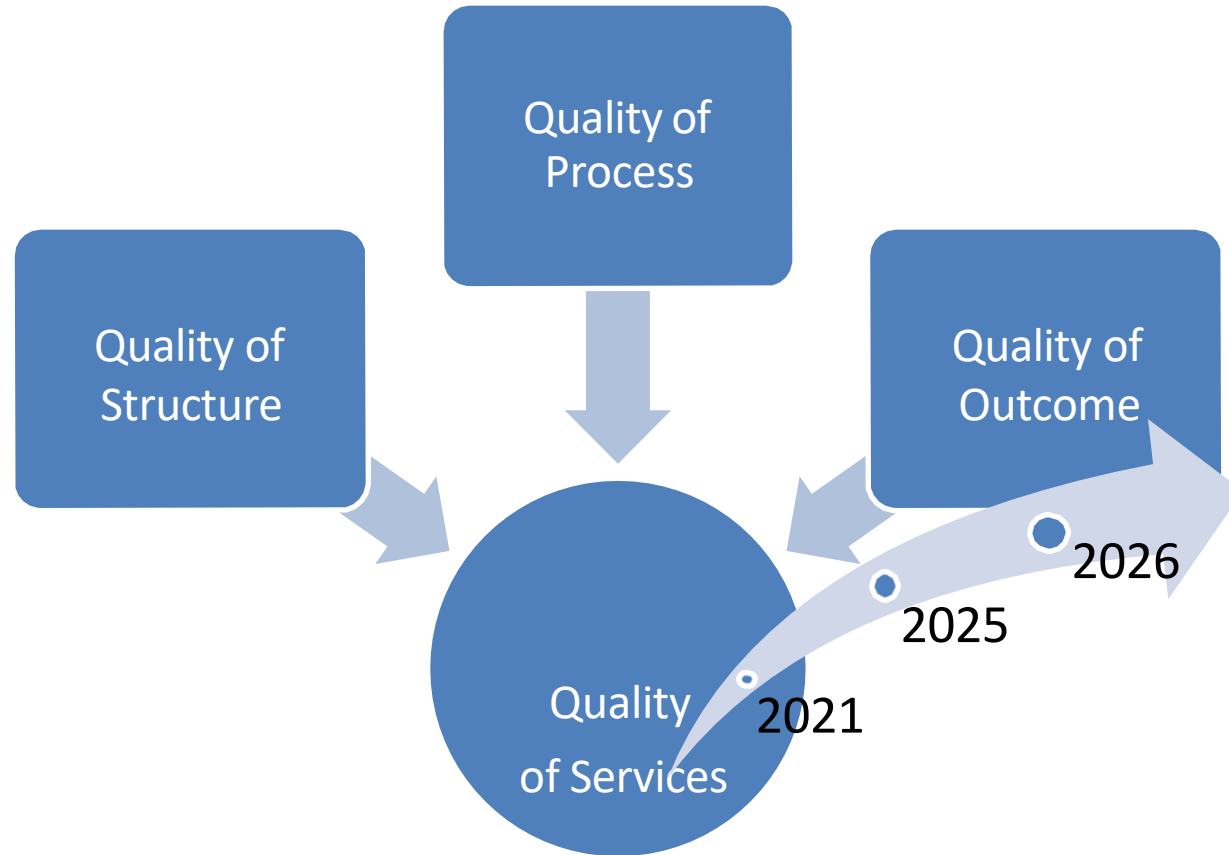


# Incidence Mitigation and Adaptation



TMI: Tree Management Index, TMQ: Tree Management Depletion Quotient and TRR: <sup>28</sup> Time Resource Ranking with Road Arboriculture and Road Safety in mind

# Incidence Mitigation and Adaptation



# Gap Analysis for Incidence Mitigation and Adaptation

1. Is the MTCR model agile to serve sudden incidence response for disasters, climate change related risks, threats, air quality related health hazards, illegal cutting down, felling, smuggling or theft incidences, complaints etc? Yes / No
2. Are all cases put through complete case analysis & incidence management practices to ensure Road Arboriculture and Crisis Reduction (MTCR)? Is any assessment reported at the earliest? Yes / No
3. Are all events or incidences or complaints assessed to understand root causes and TMI, TMQ and TRR indicators? Yes / No
4. Are efforts put in to reduce further incidence or complaint occurrences? Yes / No
5. Are MTCR diagnostics and consultations assessed periodically for problems in effectiveness? Yes / No
6. Are MTCR diagnostics and consultations assessed periodically for deviations from norms or root cause practices? Yes / No

# Gap Analysis for Incidence Mitigation and Adaptation

7. Are census control & self-corrective solutions periodically put through preventive or mitigative assessments and quality checks? Is proactive critical path management in place to ensure their availability? Yes / No

8. Is gap analysis done periodically, to assess practices adherence and quality levels for areas important to ensure best results for green ecosystems, MTCR sufficiency and sustainability for the bio-cluster? Yes / No

9. Is a post-mortem (of TMI, TMQ & TRR indicators and lifecycle theory) done for important cases to understand what could have been done better? Yes / No

10. Are contacts, availability and preferences of MTCR consultants, experts, personnel in MTCR hub deployments confirmed or updated on a periodic basis? Yes / No

11. Are there alternate strategies to help MTCR solutions when there are unforeseen impactful changes or uncontrollable situations? Yes / No



# Climate Change Mitigation and Adaptation (CCMA)



- **Tree Hazards Assessment Report (a checklist that is easy to understand and use)**
- 1. Is the tree drought tolerant? If no then this is a hazard as it needs sufficient water and soil enrichment.
- 2. Do many branches arise from one point of the trunk?
- 3. Is the tree sensitive to anything (question is arborist specific)? If yes, then review items 8 to 11.
- 4. Are there large dead branches?

# Climate Change Mitigation and Adaptation (CCMA)



- 5. Are there detached large branches hanging from the tree?
- 6. Does the tree have cavities or rotten wood along the trunk or in major branches?
- 7. Are mushrooms present at the base of the tree?
- 8. Are there cracks or splits in the trunks or where the branches are attached?
- 9. Have any branches fallen from the tree?
- 10. Have adjacent trees fallen or died?

# Climate Change Mitigation and Adaptation (CCMA)



- 11. Have the leaves developed a premature unusual color or size?
- 12. Have the roots been broken off or injured or damaged by lowering the nearby soil level, or by constructing or repairing pavements or sidewalks, or by digging trenches for telephone cables or sewer systems?
- 13. Has the location or site been changed recently by construction activity or by soil level changes or by installing of lawns or green strips?

# Climate Change Mitigation and Adaptation (CCMA)



- 14. After stump removal was the hole filled with top soil before any new plantation? If no then the roots may not be healthy.
- If the answer is yes to any of the relevant questions, then the tree can be a hazard.
- A citizen, entity or civic body interested in registering a tree in the grid, will need to enter the following “Tree identification & configuration details” via a call to the Tree Health Desk, or submission of a hand-filled form, or use of a mobile application.

# Climate Change Mitigation and Adaptation (CCMA)



## Tree Identification and Configuration Details

- **Road System name:**  
**Road System Id:**  (OR)
- **PI/F name:**  
**PI/F Id:**
- **Tree-variety or friendly name:**
- **Tree Grid Id:**



# Climate Change Mitigation and Adaptation (CCMA)



- **Estimated Age (in years by observation+):**
- **Estimated Height (in meters or feet):**
- **Type of Branching:**
- **Summary of condition or history:**
- **Enclosed picture (if any in mobile friendly formats): Yes/No**

# Climate Change Mitigation and Adaptation (CCMA)



- **Soil type: (Choose from:)** Normal hard dry soil/Normal dry soil/Wet soil (due to presence of subsoil water or surface water)/Black cotton soil/Alluvial soil/Red laterite soil/Sandy soil/Fissured rock/Hard rock
- **Soil details:**

# Climate Change Mitigation and Adaptation (CCMA)



- **(CRZ) Critical Root Zone details** (also known as drip line or an imaginary circle around the tree till where the canopy or branches seem to spread) - This is important to estimate the spread of the roots of the tree:
- **Nature of concrete work around tree:**

# Climate Change Mitigation and Adaptation (CCMA)



- **Clearances around tree:**
- **Overhead clearances:**
- The solution also permits the logging of a maintenance schedule for the tree being included in the grid.

# Climate Change Mitigation and Adaptation (CCMA)



- **Inspection or Maintenance schedule (tabulation):**
- **Log date:** **Log Id:** [Generate...](#)
- **Carried out by:**
- **Details of work carried out (to be filled as relevant to the case)**
- **(a) Visual inspection (tick as applicable)**
- **[ ] Tree Hazards Assessment (this checklist can be improved as per CRZ and related conditions)**
- **Details:**

# Climate Change Mitigation and Adaptation (CCMA)



- **(b) Closer inspection by expert (tick as applicable)**
- ☐ Diagnosis of tree and landscape problems
- ☐ Insect and disease identification and management
- ☐ Variety specific Hazard Assessment and Surveys
- **Details:**

# Climate Change Mitigation and Adaptation (CCMA)



- **(c) Preventive maintenance details (tick as applicable)**
- ☐ Training or Controlling growth patterns
- ☐ Eliminating branches and/or limbs that are dead, detached, rubbing each other or touching cables, lines
- ☐ Removing limbs that are diseased or insect infested
- ☐ Tree pruning
- ☐ Coppiced\* ☐ Pollarded\*



# Climate Change Mitigation and Adaptation (CCMA)



- **What is the meaning of Coppiced?**
  - Most of the tree is removed to ensure safety and health
- **What is the meaning of Pollarded?**
  - The trunk is left intact but the top branches are removed

# Climate Change Mitigation and Adaptation (CCMA)



- **(d) Restoration details (tick as applicable)**
- ( ) Installing support systems (cables and braces after expert evaluation)
- ( ) Improving shape or silhouette of tree
- ( ) Mulch delivery (mulch is recycled wood cut into chips, on the addition of a 2-4 inches of a mulch covering the root zone of a tree, there is more healthy root development)

# Climate Change Mitigation and Adaptation (CCMA)



- **(d) Restoration details (tick as applicable)**
- ( ) Planting ground coverings, shade tolerant plants, grasses that increase organic matter content of soil
- **Details:**

# Climate Change Mitigation and Adaptation (CCMA)



- **(e) Risk mitigation details (tick as applicable)**
- ( ) Creating better structure to “better wind resistance and reduce adverseness of storm damage”
- ( ) Removing branches or thinning to increase light generation

# Climate Change Mitigation and Adaptation (CCMA)



- **(e) Risk mitigation details (tick as applicable)**
- ( ) Guided pruning/cutting/topping (as confined to need)
- **Details:**

# Climate Change Mitigation and Adaptation (CCMA)



- **Safety advisory (to be filled as relevant to the case):**
- **(a) Dos**



## Improved Accountability

- A citizen or reporting entity will be issued a ticket that summarizes what needs to be done or will be done to mitigate risk or adverse outcome.
- This ticket becomes a point of incidence for the civic authorities and arborist team to understand the issue and to plan remedial action.
- The ticket's status will remain open (for anyone interested in tracking the same) till there is satisfactory resolution of the issue.



# Helping out



- A citizen or reporting entity can also be given a recommendation to share details and findings with others (prone to be afflicted) in the neighborhood or zone to help sustain this initiative.
- Your team could choose to release certain news & social media based advisories, announcements, hoardings, signages and knowledge aids to help improve the sensitization, awareness and involvement of related entities, communities or citizens by large.

