



Formulation of a National EST Strategy for the Philippines

Part 2: Indicators for Draft Strategies



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1. Indicators for Public Health

| Strategies | Indicators |
|--|---|
| (a) Dissemination of Information, Education, and Communication Materials (IEC) on public health hazards thru tri-media [1-5] | (i) Number of IEC materials produced and disseminated [a] |
| (b) Conduct research and extension program to improve public health [1-5] | (ii) Number/name of tri-media tapped for information campaign [a] |
| (c) Strengthen public health services [1-5] | (iii) No. of researches/ extension programs conducted (private/public funded) [b] |
| (d) Develop monitoring tools for public health [1-5] | (iv) No. and name of health professionals/allied medical professions tapped for service delivery [c] |
| (e) Formulation and promulgation of Department Administrative Orders on public health [1-5] | (v) No. of monitoring tools on public health developed [d] |
| (f) Adoption of EST as a planning paradigm in LGUs [1-5] | (vi) No. of government agencies with institutionalized monitoring and evaluation of identified EST indicators [d] |
| (g) Annual medical check-up of PUV drivers [1] | (vii) No. of Dept. orders issued [e] |
| (h) Increase green areas [1] | (viii) No. of LGUs implementing localized EST [f] |
| (i) Mandatory vehicle inspection of PUV (increased to twice a year) [1] | (ix) No. of EST policies/ ordinances passed [f] |

1. Indicators for Public Health (cont.)

| Strategies | Indicators |
|--|--|
| (j) Strict enforcement of rules/regulations/standard, e.g. enhanced anti-smoke belching operation and PETC [1] | (x) No. of motor vehicles passing the emission standards [i] |
| (k) Use of green fuels [1,5] | (xi) No. of sick leaves due to respiratory illnesses [i] |
| (l) Installation of emission reducing device in vehicles' exhaust system (e.g., catalytic converter) [1] | (xii) No. of PETC/ authorized and MVIS installed [j] |
| (m) Annual audiological check-up of PUV drivers and affected communities [2] | (xiii) No. of PETC cancelled and suspended [j] |
| (n) Installation of noise control device in vehicles [2] | (xiv) No. of drivers apprehended for drugs and liquor violations [j] |
| (o) TSM/TDM measures (e.g., synchronization of traffic lights, road widening and paving, alternate routes) [4] | (xv) No. of anti-smoke belching teams deputized/formed [j] |
| (p) Strict enforcement of rules/regulations/standard, e.g. enhanced anti-smoke belching operation and PETC [5] | (xvi) Number/share of vehicles using bio-fuels and other green fuels [k] |
| | (xvii) Million-tons oil equivalence (MTOE) of bio-fuels produced [k] |
| | (xviii) No. of LGUs with Traffic Management Office [o] |

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2. Indicators for Social Equity and Gender Perspective

| Strategies | Indicators |
|---|--|
| (a) Adoption of EST as a planning paradigm in LGUs [1-5] | (i) No. of LGUs implementing localized EST [f] |
| (b) Provision of pedestrian and bike lanes [1,5] | (ii) No. of EST policies/ ordinances passed [f] |
| (c) Passenger segregation (M/F, Senior citizens, PWD) [2,3,4] | (iii) Number/kilometer of roads with pedestrian and bike lanes [b] |
| (d) Installation of traffic and transport assistive devices [2,3,4] | (iv) Number of buses with assistive devices [e] |
| (e) People-friendly public transport facility [2,3,4] | (v) Satisfaction rating of PT services [e] |
| (f) Use of cheaper renewable energy for public transport [5] | (vi) Enhancement programs conducted [e] |
| | (vii) Number and share of senior citizens and PWD using public transport [e] |
| | (viii) Number of installed and functional facilities /equipment for senior citizens and PWDs [d] |
| | (ix) No. of PT vehicles utilizing LPG and other fuels [f] |

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3. Indicators for Strengthening Road Side Air Quality Monitoring and Assessment

| Strategies | Indicators |
|--|---|
| (a) Monitor TSP reduction [1] | (i) Concentration of criteria pollutants [a] |
| (b) Purchase/Installation of PM, HC, CO, NO ₂ , SO ₂ (road side) equipment [1,2,3] | (ii) No. of operational roadside air quality monitors [b,f,e] |
| (c) Develop locally fabricated monitoring instruments [2] | (iii) No. of locally fabricated monitoring instruments [c] |
| (d) Capacitate local government unit and other sector on monitoring and assessment [2] | (iv) No. of trained LGU personnel in air quality management [d,e] |
| (e) Enhance developmental and enforcement capacity of local government [2] | (v) No. of Air Quality Indices [g] |
| (f) AQM equipment installed/working strategic areas nationwide [2,3] | |
| (g) Reporting of air quality indices to the public (website) [3] | |

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4. Indicators for Traffic Noise Management

| Strategies | Indicators |
|---|---|
| (a) Public awareness on hazards of noise [1] | (i) Revised noise standard [b,a] |
| (b) Amendment/updating of noise standards and compliance [1] | (ii) Roadside noise level [c,d,f,a] |
| (c) Strict enforcement of MV noise regulations [1] | (iii) Enacted ordinances on noise [e,a] |
| (d) Increase compliance of MV drivers and owners with noise standards [1] | (iv) Length of noise barriers [f] |
| (e) Enhancement of LGU capability/enact local ordinances [1] | |
| (f) Installation of noise barriers [1] | |

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5. Indicators for Vehicle Emission Control, Standards, and Inspection and Maintenance

| Strategies | Indicators |
|--|---|
| (a) Develop MVIS and made operational in all regions [1,2,3] | (i) No. of MVIS stations/lanes and coverage [a] |
| (b) Establish motor vehicle standards (in-use) [2,3] | (ii) % compliance of MVs [a,b,c,d,e,f,g,h,i,j,k] |
| (c) Adopt/harmonize Euro regulations (type approval) [2] | (iii) No. of operational LGU ASBUs [g,d,f,h] |
| (d) Strengthen LGU capacity to enforce standards through I/M [2,3,4] | (iv) No. of vehicle-related accidents (roadworthiness aspect) [a,d,i,b,c,k] |
| (e) Strict regulation of PETCs by LGU/DTI/DOTC/DENR [2,3,4] | (v) No. of accredited repair shops [a,d,i,k] |
| (f) Strengthen road side apprehension on smoke-belchers and vehicles [2,3,4] | |
| (g) Intensify organization of Anti Smoke Belching Units under CENRO office [2,3,4] | |

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5. Indicators for Vehicle Emission Control, Standards, and Inspection and Maintenance (Cont.)

| Descriptors | Strategies |
|--|---|
| (h) Enactment of local ordinances providing incentives for enforcers [2] | (i) No. of MVIS stations/lanes and coverage [a] |
| (i) Intensify advocacy for conduct of Preventive maintenance [2,3,4] | (ii) % compliance of MVs [a,b,c,d,e,f,g,h,i,j,k] |
| (j) Health monitoring of enforcers and drivers [2,3,4] | (iii) No. of operational LGU ASBUs [g,d,f,h] |
| (k) Transport groups capacity to comply with MV standards improved [1,2,3,4] | (iv) No. of vehicle-related accidents (roadworthiness aspect) [a,d,i,b,c,k] |
| | (v) No. of accredited repair shops [a,d,i,k] |

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6. Indicators for Cleaner Fuels

| Strategies | Indicators |
|---|--|
| (a) Intensify promotion of alternative fuels/vehicles such as CNG, biofuels, AutoLPG, hybrid vehicles and EVs [1] | (i) No. of vehicles using alternative fuels [a,b,c,f,g,h] |
| (b) Provision of fiscal and non-fiscal incentives for producers and users [1] | (ii) No. of infrastructures for alternative fuels/vehicles [a,b,c,f,g,h] |
| (c) Access to financial assistance [1] | (iii) Euro 4 adoption [d,e] |
| (d) Fuel with less organic vapor and sulphur on the formulation [2] | |
| (e) Adoption of harmonized fuel quality standards (Euro regulations) [2] | |
| (f) Identify sources of cleaner fuels [1,2] | |
| (g) More accessible green fuels [1,2] | |
| (h) Enhanced safety handling of cleaner fuels [1,2] | |

7. Indicators for Public Transport Planning and Travel Demand Management

| Strategies | Indicators |
|---|---|
| (a) Transport modernization (thru financing) for PUV's [1] | (i) % or # of PUVs that converted from old engines [a, h] |
| (b) Promoting mass transport to policy makers [1,2,3,5,6,7] | (ii) % or # of PUVs with special needs provisions [a, d, h] |
| (c) PT network integration [1,2,3,4,5,6] | (iii) % or # of LGUs having PT planning integrated in local plans [b, c, d, f] |
| (d) Promote use of PT over private transport [1,2,3,6] | (iv) Modal share public and private mode users [b, c, d, e, f] |
| (e) Promote high-occupancy vehicles [9] | (v) # of intermodal stations [a, b, c, d, f] |
| (f) Promote park-and-ride facilities [3,4,5,9] | (vi) Presence of integrated ticketing system [a, c, d, h] |
| (g) Assess spatial & temporal dimension of truck flows [8] | (vii) travel time reduction for public and private transport users [b, d, e, g] |
| (h) Capacity building for PT sector [1,4,5,7] | (viii) # of rationalized truck routes [g] |

8. Indicators for Non-Motorized Transport

| Strategies | Indicators |
|---|--|
| (a) Promote walking as a utilitarian mode [1,2] | (i) # of NMT-friendly cities [a, b, c] |
| (b) Promote cycling as a utilitarian mode [2,3] | (ii) Rational number of NMT PT vehicles [d] |
| (c) Develop NMT facilities [1,2,3] | (iii) # /length of bike lanes constructed [b, c] |
| (d) Assess NMT PT services [4] | (iv) # /length of pedestrian walkways constructed [a, c] |
| | (v) % or amount of budget provision or incentives on the use of NMTs (national and local government) [a, b, c] |

9. Indicators for Environment and People Friendly Infrastructure Development

| Strategies | Indicators |
|--|---|
| (a) Improve, enhance enforcement of traffic rules and regulations [1,4] | (i) % Reduction in accidents involving elderly, children, women and persons with disabilities [a, c] |
| (b) Incorporate green architecture principles in the design of transportation infrastructure [1,3,4] | (ii) % Increase in the number of public transport vehicles incorporating “inclusive” design [c, d] |
| (c) Incorporate “inclusive transport” principles in transportation infrastructure and vehicle design [1,2,4] | (iii) % Increase in the number of private and public transport vehicles using green energy/fuels [e] |
| (d) Promote effective accessibility and efficient mobility for all (elderly, children, women, persons with disabilities, poor) [1,2,3,4] | (iv) # of cities adopting or implementing environmentally sustainable transport infrastructure including green designs [a, b, c, d] |
| (e) Promote the use of green fuels or energy sources for vehicles [1,3] | (v) Increase in #/Length of pedestrian walkways and other people friendly facilities [b, c, d] |

10. Indicators for Land Use Planning

| Strategies | Indicators |
|---|--|
| (a) Designation of vehicle free zones [1,2,5] | (i) Number of trainings/seminars on land use and transport integration conducted [f] |
| (b) Implementation of traffic calming strategies [1] | (ii) Number of CLUPs/CDPs integrating EST [e, g] |
| (c) Promote mixed use development [2,5] | (iii) Urban density (no. of persons/area) [c, d] |
| (d) Promote efficient use of idle lands [1,2,5] | (iv) Diversity of land uses in a given space [c, d] |
| (e) Integration of EST in CLUP/CDP and other planning guidelines [5] | (v) # of Legislations/issuances re: adoption and implementation of EST [e] |
| (f) Capability building on integration of land use and transport policies [5] | |
| (g) Participatory process in stakeholder consultation [5] | |

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11. Indicators for Road Safety

| Strategies | Indicators |
|---|--|
| (a) Develop a comprehensive inspection and maintenance program for all vehicles (1) | (i) Issuance of DOTC Department Order (DOTC-DO) [a] |
| (b) Motor vehicle inspection system program (MVIS program) [1] | (ii) Number of MVIS lanes operating [b] |
| (c) Road safety audit [2,3] | (iii) Number of highway projects audited for road safety [c] |
| (d) Highway Engineering manuals and standards for road safety [2,3] | (iv) Number of manuals and standards developed and disseminated [d] |
| (e) Implementation and funding of blackspot program [3,13] | (v) Amount allocated for blackspot program [e] |
| (f) Research on accident costs [4] | (vi) Table of accident costs [f] |
| (g) Clear designation and empowerment of a national body serving as coordinator/manager for road safety [5] | (vii) A.O. and/or D.O. creating the national road safety coordinating body [g] |
| (h) Road accident database system (including TARAS, MMARAS, and health sector data collection system) [6,13,15] | (viii) Accident fatality/injury per unit population [h] |
| | (ix) Accident fatality/injury per kilometer of road [h] |

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11. Indicators for Road Safety (Cont.)

| Strategies | Indicators |
|---|--|
| (i) Road safety research center [8] | (x) Accident fatality/injury per veh-km traveled [h] |
| (j) Road safety forum/ workshops/ conferences [8,9,13] | (xi) Number of researches published/disseminated [i,j] |
| (k) Harmonization traffic laws [10] | (xii) Inventory of road safety activities [j] |
| (l) Capability building on road safety at the LGU level [11] | (xiii) Number/inventory of traffic laws [k] |
| (m) Establish traffic courts [10, 11] | (xiv) Number of road safety curricula/ training programs/ education programs [l,o,q,r,s] |
| (n) Traffic discipline zones (TDZ) [11, 13] | (xv) Number of traffic courts established |
| (o) Capability-building on emergency response system for LGUs [12] | (xvi) Number of traffic discipline zones (TDZ) |
| (p) Trauma units in tertiary hospitals [12] | (xvii) Number of hospitals with trauma units [p] |
| (q) Road safety education program for vulnerable users (children, etc.) | (xviii) Number of road safety training centers established [s] |
| (r) Integration of road safety education in curriculum | |
| (s) Improved driver licensing / driver training system | |

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Resources

Challenge:

How do we support the plans and programs?

Use the Special Vehicle Pollution Control Fund (SVPCF)

- Derived from the **Motor Vehicle User's Charge**
- One of 4 trust funds. Others are:
 - ✓ Special Road Support Fund
 - ✓ Special Local Road Fund
 - ✓ **Special Road Safety Fund ← can be used for RS**
- The 3 other funds are under the DPWH while **SVPCF is under DOTC**

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Resources

Example of SVPCF Projects:

- Planning Support Capacity Building for DOTC and LTO on the Implementation of a Phil Nationwide Motor Vehicle Inspection and Maintenance Program (NMVIMP) – \$ 320K
- Public Transport Network Development Plan for Mega Manila and Other Key Cities
 - Development of Mega Manila Public Transportation Planning Support System (MMPTPSS) : \$ 575K
 - Development of Public Transportation Strategic Plan for Metro Cebu : \$ 745K
- Capacity Building of Personnel Including Institutional Strengthening for EST (CBEST) : \$ 65K
- Center for Research in EST (CREST) : \$ 320K
- Development of CLRV Standards : \$ 65K

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Challenge:

How do we mainstream EST?

Knowledge Base, Awareness and Advocacy

EST must be like an epidemic

- It must be contagious!
- Initiatives must translate into big impacts!
- The critical mass must be reached!

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Outcomes of DOTC Strategic Planning (1)

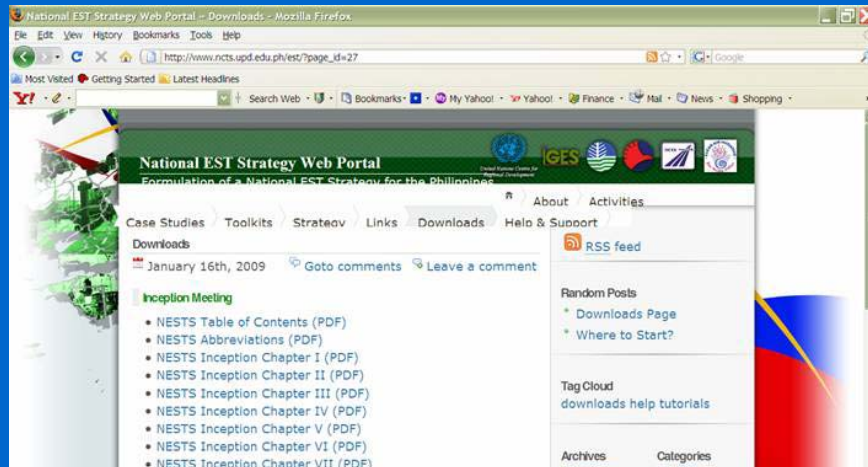
| PAP | Hindering Factor | Strategy Thematic Area | Timeframe | Quantifiable target |
|--|---|--|-----------|---|
| Public Transport Vehicle Modernization Program Ex:- CNG Buses - LPG Jeepney - LPG Taxi | <ul style="list-style-type: none"> Lack of refueling stations/infra-structures support Concentrated in Manila only because of lack of supply of LPG | Public Transport Planning and Travel Demand Management | 2009-2010 | By 2009: <ul style="list-style-type: none"> 200 CNG Buses 250 LPG Jeepneys 75% taxis nationwide |

Outcomes of DOTC Strategic Planning (2)

| PAP | Hindering Factor | Strategy Thematic Area | Timeframe | Quantifiable target |
|--|--|---|-------------|--|
| Motor Vehicle Inspection System (MVIS) Development Program | | Vehicle emission control, standards, and inspection and maintenance | 2009 – 2010 | By 2009: 8 Regional Motor Vehicle Inspection Centers constructed in major cities |
| Anti-smoke belching operation/ random roadside emission testing of in-use motor vehicle | <ul style="list-style-type: none"> Insufficient manpower Insufficient portable testing equipment | Strengthening Roadside AQ Monitoring and Assessment | 2009 – 2010 | Procurement of additional emission testing equipments for all regions |

National EST Strategy Web Portal

<http://www.ncts.upd.edu.ph/est>



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End of presentation

Thank you for your attention.



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