# Harmony with Nature Report (April 2015 – March 2016)



" Make efforts to nature conservation then you can see more beautiful view "

ΤΟΥΟΤΑ

Toyota Motor Asia Pacific Engineering & Manufacturing Co., Ltd.

# About the Harmony with Nature Report

Toyota Motor Asia Pacific Engineering & Manufacturing Co., Ltd. (TMAP-EM), regional Head Quarter of Asia Pacific, always focus on the environmental issues to realize harmony with people, societies, and the global environment. As all Toyota companies in Asia Pacific region have been implementing many environmental activities, so we would like to share these activities to the public.

The purpose of this report is to :

- 1) Explain the concept and framework of Toyota Harmony with Nature activity.
- 2) Share the activity and developments of each Asia Pacific companies in implementing Harmony with Nature concept.
- Create awareness among Toyota customers in Asia Pacific region of the efforts and relevance of doing the Harmony with Nature activities.

Environment Management Promotion Office Toyota Motor Asia Pacific Engineering & Manufacturing Co., Ltd.

### **Company Profile**

Toyota Motor Asia Pacific Engineering & Manufacturing Co., Ltd.	
Head Office :	99 Moo 5, Ban-Ragad, Bang-Bo, Samutprakarn 10560
Foundation :	April 2007
Capital :	1.3 Billion Thai Baht
Shareholder :	Toyota Motor Corporation 100%

# President's Message



Global warming and climate change has become the most serious environmental issues nowadays. World leaders are giving now more emphasis on these issues based on the actions from the Conference of Parties (COP21) in Paris. The global target of this agreement is to reduce greenhouse gas emission and hold the average global temperature rise below 2°C by 2030. Currently, almost all countries in the world have signed the Paris Agreement to take actions on reducing their CO2 emissions. Involved countries have aligned their regulations to meet their commitments and it has become an important factor on how business will be done.

In October 2016, Mr. Akio Toyoda, CEO of Toyota Motor Corporation (TMC) reminded "the Value Toyota Creates for Customers". To be needed and loved by society, Toyota should help solve social issues and develop a sustainable society through: Safety and Peace of Mind, Environmental Sustainability and Waku-doki (excitement and exhilaration that wows you).

Aligning with the global trend, Mr. Takeshi Uchiyamada, Chairman of TMC, announced last October 2015 the long term global direction of "Toyota Environmental Challenge 2050" which focus on "6 Challenges" that aims on Zero CO2 emission and beyond. This will be the new considerations on how Toyota will be doing its business and put environment as top priority.

Toyota will speed up the implementation of its environmental activities and take the lead among its business competitors. We commit to challenge ourselves in every step of the way. Together, let us all "build better cars and enrich the lives of communities" by moving to achieve the 6 Challenges target. We will help create a sustainable society for a better future.

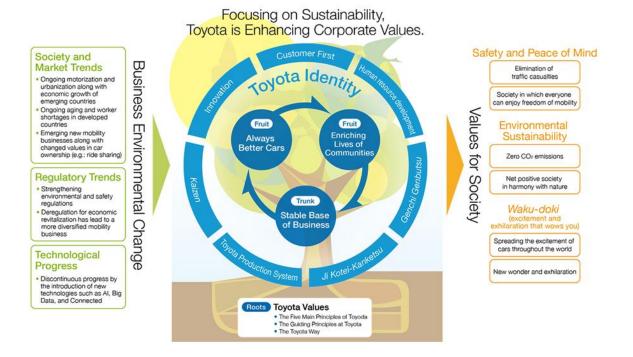
Jakuro Jakami

Mr. Tatsuro Takami President Toyota Motor Asia Pacific Engineering and Manufacturing Co., Ltd.

# The Toyota Way of Sustainable Growth

With uncertainty increasing globally, Toyota considers that its business will be affected by a complication of social and market trends, various regulations, technological growth, etc. in a complex form. In consideration of such uncertainty, while capitalizing on Toyota identity and its strengths including Kaizen and Innovation accumulated until now, Toyota will strengthen its business base by contributing to the creation of Always Better Cars and Enriching Lives of Communities that would exceed customer expectations.

By maintaining and improving this positive cycle, we can continually create for communities with three values: Safety and Peace of Mind, Environmental Sustainability, and Waku-doki (excitement and exhilaration that wows you). At the same time, we will aim at enhancing Toyota's corporate values.



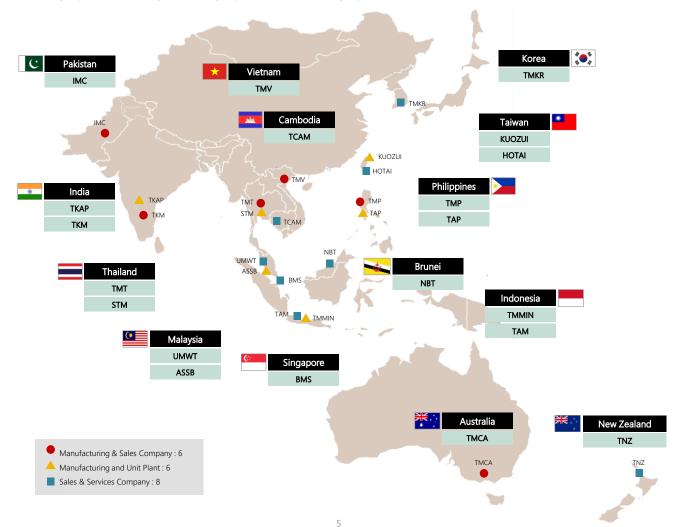
#### 4

# Toyota AP Affiliates : TMAP-EM Responsible Environmental Area

Roles of TMAP-EM

- 1. To integrate all essential functions and operate as a regional headquarter
- 2. To develop regional resources to meet global standards, based on advanced technology and know-how provided by Toyota Motor Corporation Japan

TMAP-EM is the headquarter of Toyota in Asia Pacific region. In term of Environment scope, TMAP-EM responsibility covers 10 countries in Asia Pacific and 4 countries in East Asia & Oceania. So, there are total 14 countries , 20 affiliates which can be grouped into 3 business type : (1) Manufacturing & Sales group, (2) Manufacturing & Unit Plant group and (3) Sales & Services group.



### Aiming to Establish a Future Society in Harmony with Nature

Since its foundation, in 1937, Toyota has been consistently committed to the idea of contributing to society by manufacturing automobiles, and leading innovation through technology and creativity. This spirit of challenge that stands up to change has been handed down to us today through the company's DNA. Looking forward too, we would like to continuously contribute to society through our business activities and to carry on being a company that customers choose and that brings a smile to every customer.

We have considered the ideal form of a new mobility society and tackled serious environmental issues head-on, while positioning our contribution to the development of a sustainable society as a key challenge for management. The development of the world's first mass-produced hybrid vehicle, the Prius, and the fuel cell vehicle MIRAI, reflect this spirit of unprecedented challenge. We were able to overcome numerous difficulties and launch these cars due to the strong support we have received from many people.

Despite these energetic initiatives, the global environment remains in a critical situation. Extreme weather conditions attributed to climatic changes driven by greenhouse gases threaten our livelihood.

Meanwhile, the seriousness of environmental issues is increasing over a wide area, with population growth, accompanied by water shortages and resource depletion, and degradation of biodiversity due to the fragmentation of ecosystems.

In response to the situation, we need to take on new challenges that consider the world 20 or 30 years in the future, in order to remain closely aligned with the global environment. This means not merely trying to reduce negative factors associated with automobiles as close to zero as possible, but at the same time, looking beyond zero, challenging ourselves in all-Toyota initiatives toward a net positive impact.

It also means a further strengthening of these initiatives in collaboration with all stakeholders who share our aspirations. We will consolidate new ideas, dynamism and technology to tackle together the realization of a truly sustainable society.

We have started to take on this new challenge aimed at a society where people, automobiles and nature coexist in harmony, providing a bright future for our children, with clear skies.

# Six Challenges of Toyota

To move toward a net positive impact rather than just trying to reduce negative factors to zero, Toyota has set itself six challenges. All these challenges, whether in climate change or resource and water recycling, are beset with difficulties, however we are committed to continuing toward the year 2050 with steady initiatives in order to realize sustainable development together with society.



# I. Challenge of Achieving Zero

#### New Vehicle Zero CO<sub>2</sub> Challenge 1 **Emissions Challenge** Reduce global average new vehicle Target CO<sub>2</sub> emissions by 90% from Toyota's 2010 global Level Accelerate widespread of next-generation Actions vehicles to save energy and use diverse fuels Widespread of HV & PHV globally · Widespread of zero emission vehicles such as FCV & EV Life Cycle Zero CO<sub>2</sub> Emissions Challenge Completely eliminate all CO2 emissions,

including materials, parts and

# manufacturing from the vehicle lifecycle

Reduce CO<sub>2</sub> emissions from the entire lifecycle, materials production, parts, and vehicle production to driving and disposal stage Reduce CO<sub>2</sub> emissions during material production by development and wider adoption of low CO2 emission materials

 Reduce environmental impact by wider adoption of recycled biomaterials

# Plant Zero CO<sub>2</sub> Emissions Challenge



Achieve zero CO2 emissions at all plants by 2050

Introduce and develop low CO<sub>2</sub> technologies and daily Kaizen, and promote use of renewable energy and hydrogen

- · Reduce energy use to one third by simplifying and streamlining production processes and innovative energy saving
- Use wind power produced on-site at our Tahara Plant by around 2020,

# II. Net Positive Impact Challenge

Target

Actions



### Challenge of Minimizing and Optimizing Water Usage

Enact effective wastewater management and minimize water consumption based on individual local situations

Reduce water consumption in existing manufacturing processes as well as introducing technologies that reduce industrial water consumption through rainwater use and improving water recycling rates

Improve local environment by ensuring by our own standards that plant wastewater is cleaner than local river water

Challenge 5

Challenge 6

#### Challenge of Establishing a Recycling-based Society and Systems



#### Promote global rollout of end-of-life vehicle treatment and recycling technologies developed in Japan

Actions

Target

Actions

Establish a recycling-based society with four key areas: (1) utilizing eco-friendly materials;

- (2) using parts for longer;
- (3) developing recycling technologies;
- (4) manufacturing vehicles from end-of-life vehicles
- Two global rollout projects started from 2016:
- Toyota Global 100 Dismantlers<sup>\*1</sup> Project
- 2) Toyota Global Car to Car Recycle Project

#### Challenge of Establishing a Future Society in Harmony with Nature

Promote global rollout of the nature conservation activities beyond the Toyota Group and its business partners

Expand Toyota's long-standing nature conservation activities in the areas of forestry, environmental grants, and environmental education

The following three future-oriented projects started from 2016 to share our knowhow and experience gained from these environmental activities

- 1) Connecting communities: Toyota Green Wave Project
- 2) Connecting with the world: Toyota Today for Tomorrow Project
- 3) Connecting to the future: Toyota ESD\*2 Project
- \*1: Business operators who dismantle automobiles

\*2: Education for Sustainable Development



Challenge 6"Challenge of Establishing a Future Society in Harmony with Nature" A society full of nature, living creatures, and lively children



# **TMAP-EM Harmony with Nature Activities**

# TMAP-EM Eco Learning Center







Mr. Tatsuro Takami, President



Exhibition Tour



Exhibition Tour

On Friday 3<sup>rd</sup> June, 2016, TMAP-EM held an event celebrating the Grand Opening of Eco Learning Center. Mr. Tatsuro Takami, president of TMAP-EM, and Executive Vice President presided over the official opening of the TMAP-EM Eco Learning Center by planting the memorial trees together and then tour the learning center. The purposes of the learning center are as follows;

- 1) Eco Learning Center will be the facility to increase environment awareness and relaxing area.
- 2) To be Environment's role model for supplier and AP affiliates.
- 3) To promote environmental activities for sustainable development follow AP the 6th environmental action plan.



Station1 Origin of Eco Forest - TOYOTA Earth Charter & Environmental Challenge 2050 - Background of Eco forest in TMAP-EM

- Eco Forest Plantation Concept.
- The key success concept.



Station 2 Biodiversity - Biodiversity in TMAP-EM Eco Forest.



Station 3 Water Cycle - The water cycle concept. - How does the water cycle work in the forest.



Station 4 Renewable Energy
- Renewable energy concept and
Solar Energy concept (Solar roof top
15 kW.)

- The TOYOTA Mirai and Eco driving.

# Asia Pacific Affiliates Harmony with Nature Activities

# Toyota Biodiversity and Sustainability Learning Center "Cheewa Panavet"





On 22 June 2016, Her Royal Highness Princess Maha Chakri Sirindhorn graciously presided over the launch of the Toyota Biodiversity and Sustainability Learning Center "Cheewa Panavet" at Toyota Motor Thailand Co., Ltd. Ban Pho Plant. This is to celebrate the 60<sup>th</sup> Anniversary of Her Royal Highness Princess Maha Chakri Sirindhorn.

The purpose of this ecological learning center is to create a habitat of living organisms around Ban Pho plant, and also be a learning center about Eco Forest and Biodiversity in order to raise the level of awareness of people.

TMT is cooperating with the Foundation for Environmental Education for Sustainable Development (FEED Thailand) and Office of the Basic Education Commission (OBEC), Ministry of Education, to develop a curriculum of environmental education for students.

Thailand : Toyota Motor Thailand Co., Ltd. (TMT)





### Afforestation in Local Community

#### India : Toyota Kirloskar Auto Parts Pvt. Ltd. (TKAP)

TKAP increase the green area in local community by plantation activity at 1,375 m<sup>2</sup>. This activity involved the Company, Community & Students of the local government school.





# Kiwi Guardians

# 🗿 😍 👔

#### New Zealand : Toyota New Zealand Ltd. (TNZ)

TNZ began a long-term partnership with the Department of Conservation (a New Zealand government agency) starting in March 2016 to support a new conservation program "Kiwi Guardians" for kids. The program encourages children to visit 20 wildlife and landscape sites around New Zealand as well as participate in 5 home activities.

It's an activity program for kids to learn about nature, earn cool rewards and go on epic family adventures!

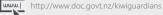
#### Highlights

· It gets children out and exploring New Zealand

They take part in an activity or take action in their local area

• They find the Guardian Post at each location to earn a Kiwi Guardian medal!

This program will help young people to connect with New Zealand's nature and inspire them to take action help protect it in their back yards and communities. This develops their appreciation for the environment, and also their health, personal development and capability.









Guardian Post

Toyota Kiwi Guardian medals

Brochure of the activity







2. The actual experience

3. Re-engaging after you have got home which leads back into planning the next adventure

1. Planning your adventure

# RO Drinking Water Facility

#### India : Toyota Kirloskar Auto Parts Pvt. Ltd. (TKAP)



TKAP provide safe drinking water to 1,300 people in the local community by Installing 1000 liters per hour RO facility.

### Waste Oil Spillage Handling



#### Malaysia : UMW Toyota Motor Sdn. Bhd. (UMWT)

Toyota Service Center, Motozoom Sdn. Bhd. collaborate with Shell to organize CSR program on waste oil spillage handling in order to improve awareness and sensitivity to the environment. This program is to share the procedures and precaution in handling of waste oil spillage and filtering process before water been discharged.



### Mangrove Reforestation



#### Thailand : Toyota Motor Thailand Co., Ltd. (TMT)

Toyota Mangrove Reforestation is collaboration between TMT, Quartermaster Department Royal Thai Army and Foundation for Environment Education for Sustainable Development (FEED). The objective of this activity were to preserve the last delta mangrove forest in central region and to reduce the  $CO_2$ , which was one of the main causes of global warming crisis.

This project provide an opportunity for volunteers from various sectors such as Toyota employees and their families, affiliate representatives, dealers, auto parts manufactures, customers, member of Toyota CSR, Facebook and e-Toyota club as well as ordinary people to participate in the effort to repay to the society and environment.

In addition, this activity serves as the offering of the royal merit to His Majesty the king and response to Her Majesty the Queen's instruction concerning forest and environment preservation. This Toyota Mangrove Reforestation activity has been held annually since 2004. From the first years to the latest, the total number of mangrove seeding is over 477,800 and the total area is over 400,000 m<sup>2</sup> at Bangpu Natural Learning Center Royal Thai Army, Samutprakarn. These will contribute to absorption of over 5,000 tons of CO<sub>2</sub> per year.





# Green Kaizen

#### Taiwan : Hotai Motor Co., Ltd. (HOTAI)

HOTAI continued to promote Environment Month by conducting Green Kaizen activity for HOTAI & dealers employees and community to make a better community environment. Each dealer choose a community and kaizen, such as planting, cleaning, renovation, and staff work as one day volunteer with community people. The activity has been held in September to November 2015, HOTAI and dealers held 8 activities with more than 1,700 participants.

HOTAI also promote environmental activities through television and newspaper in order to let people understand what HOTAI do for the environment protection.



A. Plant on the park trail, with installation art to create beautiful scenery

*B. Plant the Golden Trumpet-tree and Taiwan Incense Cedar in the fragmented land* 

*C. Build the vanilla maze and plant the vanilla to reduce disease-borne mosquito* 

D. Plant and renovate the local temple space

E. Set the hydrophilic experience pool, create the Laso'ay fountain to be an education place.

F. Plant the "Bike supply and rest station"

*G. Set up the garden fence, and plant the Orange Jasmine in the Happy Garden* 

*H. Renovate and plant the golden flowers in the Triangle park.* 









Promote activity to public

TOYOTA環境月 擁抱緣未來

# **Stop Global Warming Project**



#### **Thailand**: Toyota Motor Thailand Co., Ltd. (TMT)

In cooperation between TMT and the Thailand Environment Institute Foundation (TEI), the Stop Global Warming project has been implemented since 2005. The objectives of this project are to encourages schools, communities and local governments to initiate local actions to reduce greenhouse gas emissions in their cities and schools, also to build up and strengthen capacity of local authorities to be a center to disseminate information of global warming and undertake measures to help mitigate the effects of climate change. The project conducted under 6 main campaigns; 1. Energy Reduction 2. Waste Reduction 3. Sustainable Transportation 4. Increasing Green Area 5. Water Conservation and 6. Local Wisdom.

To the latest year, the project has worked with 267 schools and 209 municipalities in 77 provinces across the country. During the past 11 years, the implementation of the project results in greenhouse gas emissions reduction for more than 16,000 tons. From the continuing of the project, TMT can create "Stop Global Warming Network" to promote the activities which implemented under this project to the public.



and Evaluation

Opening Ceremony

Youth Camp



Project Implementation -

The Winner judgment — Closing Ceremony

### **Eco Forest Project**



#### Vietnam : Toyota Motor Vietnam Co., Ltd. (TMV)

TMV restored 300,000 m<sup>2</sup> of the tropical forest and natural landscape of Giong Temple, Soc Son, Hanoi for planting tropical trees including of 25,000 rare trees in 250,000 m<sup>2</sup>.

This activity is to encourage volunteers, TMV staffs and dealers to positively participate in planting, also to contribute to environment protection. Moreover, this area will be an area for outdoors natural training activities for teachers and students.





# 110,000 Mangroves Plantation



#### Indonesia : PT. Toyota Motor Manufacturing Indonesia (TMMIN)



TMMIN expanded biodiversity activity to Central Java area by planting 110,000 mangroves at Maroon Beach, Semarang City for shoreline protection against abrasion in north cost of Java Island. This activity is a part of journey to contribute environment preservation of Java-Bali Island.

The participants who joined the activity involved Governor of Central Java Province, Ministry of Environment & Forestry, TMMIN Management, Suppliers & Dealers.

# Palm Garden and Adopted Forest



#### Philippines :

Toyota Motor Philippines Corporation (TMP)



Toyota Palm Garden is the first Palm Conservatory in Philippines which aims to serve as a living showcase of the country's endemic and endangered palm species. In October 2015, 35,000 m<sup>2</sup> of Toyota Palm Garden was planted with 100 palm seedlings from 13 species.



To continue forest conservation activity, TMP planted 560 tress at 100,000 m<sup>2</sup> of Toyota Adopted Forest Block in October 2015.

# **Eco Forest Activity**

#### Thailand :

### Siam Toyota Manufacturing Co., Ltd. (STM)

STM has continued to organize the Eco Forest activity in order to increase green area in plant and community to reduce  $CO_2$  emission and to build up good relationship among STM and communities.

Total 10,000 trees of 22 species were planted in June 2016. The participants who joined this event were around 1,442 persons including employees, government educational institution and communities.





# Plantation at Guru Bhavan, Ramanagara

#### India : Toyota Kirloskar Motor Pvt. Ltd. (TKM)





TKM conducted plantation activity at Guru Bhavan campus in order to create environmental awareness among the future generation by involving 300 students to plant over 200 saplings.

This plantation activity focused on celebrating the five elements of nature which are earth, water, air, fire and the sky. Upon administering of green pledges, the students committed to keep their school, homes, public places and surroundings clean.

# **Toyota Farm Project**





#### Korea : Toyota Motor Korea Co., Ltd. (TMKR)

Farm project is a farming initiative by TMKR since 2012. TMKR has continued to run this project for the fourth year in 2015. This eco-friendly social contribution activity provided eco-friendly life style for Hybrid Vehicle owner in the theme of "City Agriculture" One hundred families applied but it is limited to only 25 families. Each family received their own plot of land to plant a variety of vegetables and fruits.

The program not only provides families a chance to grow their own vegetables, it gives them a chance to contribute to charity, as well. These crops were harvested once a month, and 20% were made into kimchi for donation to shelters for the homeless.



# Girls Sanitation in Schools

#### India : Toyota Kirloskar Motor Pvt. Ltd. (TKM)



'Swachh Bharat : Swachh Vidyalaya' is the Government's National Campaign which supports the girl sanitation in India. Taking a step further towards protecting the dignity of the girls, TKM constructed sanitation units at schools identified by the Government in three locations across India to ensure that every school in India has functional and well maintained water, sanitation and hygiene facilities. Currently, there were around 500 toilets have been constructed through this campaign.

# **Community Energy and Water Audits**



### Australia :

#### Toyota Motor Corporation Australia Ltd. (TMCA)

TMCA partnered with local government to provide technical expertise through environment and energy auditing for schools and small businesses for reducing energy and water usage to save money and improve the environment. Moreover, TMCA engineers also provided support to implement environmental activity for improvement.



# Mangrove Plantation



#### Pakistan : Indus Motor Company Ltd. (IMC)

IMC collaborated with WWF to implement the mangroves plantation activity at Keti Bunder & Sand spit in order to make a better environment.





# Eco Academy

#### Korea : Toyota Motor Korea Co., Ltd. (TMKR)

TMKR has conducted Eco Academy since 2006 and continued to promote this activity in order to educate on the importance and value of the environment based on eco-friendly mindset by teaching children to care about the environment and fulfill social responsibilities as a car manufacturer In FY2016, there are total 20 schools (4,000 students) participate in this activity.



٢

# Toyota Environment Education Theater

**Philippines**: Toyota Motor Philippines Corporation (TMP)



TMP refurbished 300 m<sup>2</sup> orientation room inside Nature Conservation Education and Ecotourism Center of Makiling Botanical Gardens to be the "Toyota Environment Education Theater (TEET). The theater will serve as a place for orientations and briefings for Makiling Botanical Gardens guests. Up to 100, 000 to 150,000 guests are received here varying from local tourists to ASEAN and international visitors.

# **Environmental Friendly Bag**

#### Pakistan : Indus Motor Company Ltd. (IMC)

IMC promoted recycle paper on daily activities by implementing Paper Bag Activity with an environmental friendly concept. IMC provided paper bag to all dealers for using instead of plastic bag when sale the spare parts. This activity can help to reduce plastic waste.

Moreover, there is WWF logo with Toyota logo on the paper bag. This is the good method to promote Toyota Eco Brand Image.





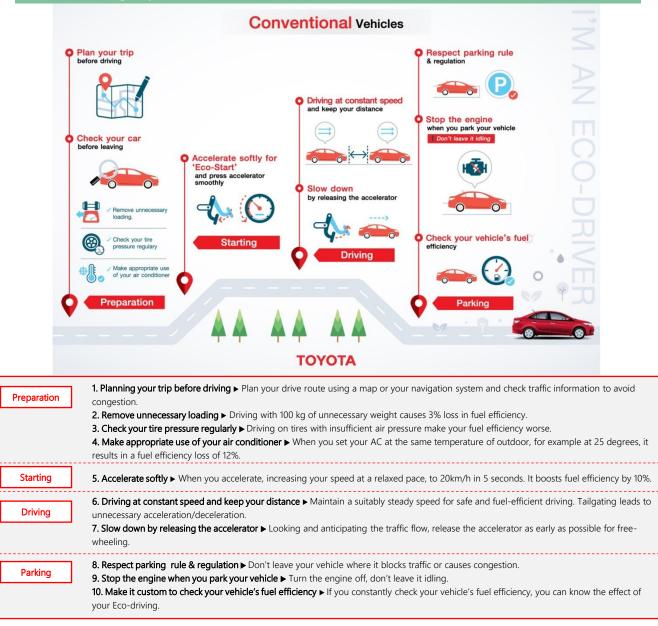
'Green Me' Environmental Education at Schools

#### India : Toyota Kirloskar Motor Pvt. Ltd. (TKM)

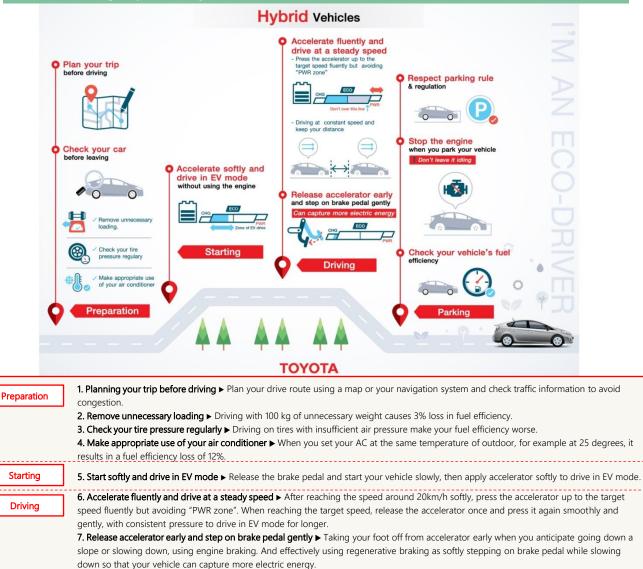
TKM conducted "Green Me" activity in order to develop an eco-conscious attitude among students, teachers and community. There were 20 schools around Bidadi region have implemented the environmental education curriculum which had 5 thematic concerned to Water Conservation, Waste Management, Climate Change, Biodiversity and Community. This program comprised of 19 projects, 15 campaigns and 36 competitions for the children. The 3 best schools, teachers, children and volunteers were rewarded.



# **Eco-Driving Tips for Conventional Vehicles**



# **Eco-Driving Tips for Hybrid Vehicles**



Parking 8. Respect parking rule & regulation ► Don't leave your vehicle where it blocks traffic or causes congestion.

9. Stop the engine when you park your vehicle ► Turn the engine off, don't leave it idling.

10. Make it custom to check your vehicle's fuel efficiency ► If you constantly check your vehicle's fuel efficiency, you can know the effect of your Eco-driving.

# Toyota Asia Pacific Affiliates' Report



Vietnam

Toyota Motor Asia Pacific Engineering & Manufacturing Co., Ltd. Environment Management Promotion Office

Environment Management Promotion Office env@tmap-em.toyota-asia.com

Published : November 2016