CHAPTER 1

Background and Objective of the Study

1. Background

As Asian countries develop rapidly, a huge automobile market and society emerges in these Asian countries. In line with this expansion of automobile market and society, a huge amount of End-of-Life Vehicles (ELVs) is expected to be generated in Asia. It is predicted that about 2.4 million motor vehicles will be discarded by 2020 in the Association of Southeast Asian Nations (ASEAN), and that ELV recycling and disposal will become more serious challenges for Asian countries in the near future.

Moreover, as the automobile market in Asia keeps growing, the markets for used vehicles and recycled parts will keep expanding in Asia. Used cars and parts are very important to accelerate motorisation in each country, but if they are not appropriately maintained before they are sold in the market, they may cause safety problems. Thus, securing the minimum quality of used cars and parts are indispensable for preventing road safety. Sometimes, automobile manufacturing companies and genuine new parts manufacturing companies oppose the importation of used cars and parts because these compete with their genuine new products. The control of used cars and parts, including their importation and exportation, is also an important consideration to foster automobile industries in each country.

The legislations and institutional systems for recycling and disposal are yet to be developed in a number of ASEAN countries. The improper treatment and disposal of ELVs without appropriate equipment and facilities are causing environmental pollution and health problems for workers and residents in many countries. Thus, the development of the vehicle recycling system, including the development of industrial infrastructure and the capacity building for appropriate ELV recycling and disposal, should be urgently promoted.

2. Objectives of the Study

The objectives of this study is to understand the situation, identify the challenges, and provide recommendations relevant to used cars and parts, automobile recycling, and disposal.

Understanding the current status and challenges of current automobile recycling in Asian countries is the first step. Identifying and presenting them to the government officials and industry stakeholders of the respective countries will encourage them to develop automobile recycling systems.

Furthermore, understanding the current statuses in the respective countries will enable experts to develop recommendations on how to build suitable institutional systems that are in harmony with the industrial structures, required policy measures for capacity building, technical assistance, and knowledge sharing.

3. Approach of the Research

The research tried to collect information on and analyse the following points:

1. The current status of automobile recycling in the targeted countries:
   - *1.1 The status of trade of used cars and used parts (import and export situation) in the ASEAN region, plans and regulations relative to the import regulations and vehicle registration in the ASEAN region, and how imported used cars or cars that have figured in accidents are actually handled, among others.*
   - *1.2 The volumes, distribution, flow, model years, sale prices, processing situation and check items on trading, among others, of ELVs, recycled parts, and resources (iron, non-ferrous metals, catalysts and the like.).*
   - *1.3 The distribution volume, flow, model years, sale prices and processing method of the products that are generated during dismantling (battery, tire, and waste fluid, among others). Types of parts or components, materials that are difficult to be processed and may cause environmental pollution.*
   - *1.4 Factual survey of end-of-life two-wheeled vehicles (motorcycles).*
   - *1.5 Types of operation and number of recycling-related companies (penetration status of Japanese, European and American recycling companies) and their management situation (annual quantity of processing, technological level, number of employees, annual sales, sales portfolio and the like)*

2. The challenges in automobile recycling legislations and institutional systems in vehicle recycling systems:
   - *2.1 Challenges in vehicle recycling systems (illegal dumping, inappropriate processing of waste [pouring of waste fluid and fluorocarbon emissions to the atmosphere, and the like], capacity shortage of final disposal sites, dismantling technology, safety, efficiency, recycling rates, and the like)*
   - *2.2 Trends in automobile recycling policies and automobile recycling legislations, including road transportation regulations, waste treatment and disposal methods, among others, and their implementation, including information on institutional structures of executive agencies:*

- *Consideration of institutional systems for preventing improper processing of parts containing hazardous waste such as fluorocarbon, air-bags, and automobile shredder residues (ASRs), tires, waste fluids, and the like[1].*
- *Demarcation of roles (role, obligation, economic burden, among others) among manufacturers, importers, vehicle users, government agencies (including local governments), and other stakeholders.*
- *Target of recycling/recovery.*

In addition, related environmental regulations on landfills and incineration bans, and heavy metals use bans were surveyed.

3. The opinions and cooperation/collaboration systems of automobile recycling stakeholders (parliament, administration, industry, and citizens) in target countries.

The target countries in this study are listed in Table 1. Cambodia, Lao PDR, Myanmar, Viet Nam, Thailand, Malaysia, Indonesia and India, were analysed in detail.

[1] In Japan, fluorocarbon, airbags, and ASRs are categorised as special items whose treatment costs are covered by deposit on sales, in accordance with the Automobile Recycling Law of Japan and other related legislations. Batteries, tires, and waste fluids are also defined as special items that should be taken off before dismantling.

Table 1. Target countries

Target countries	Coverage of the research points[*2]							
	1.					2.		3.
	1.1	1.2.	1.3.	1.4.	1.5.	2.1	2.2	
Cambodia	✓[*1]	✓[*1]	✓[*1]	✓[*1]	✓[*1]	✓[*1]	✓[*1]	✓[*1]
Lao PDR	✓[*1]	✓[*1]	✓[*1]	✓[*1]	✓[*1]	✓[*1]	✓[*1]	✓[*1]
Myanmar	✓	✓	✓	✓	✓	✓	✓	✓
Viet Nam	✓	✓	✓	✓	✓	✓	✓	✓
Thailand	✓	✓	✓	✓	✓	✓	✓	✓
Malaysia	✓	✓	✓	✓	✓	✓	✓	✓
Indonesia	✓	✓	✓	✓	✓	✓	✓	✓
India	✓	✓	✓	✓	✓	✓	✓	✓
China	✓[*1]	✓[*1]						
Republic of Korea (South Korea)	✓[*1]	✓[*1]						
Taiwan	✓[*1]	✓[*1]						
Singapore	✓[*1]							
Philippines	✓[*1]							
Brunei	✓[*1]							
Mongolia	✓[*1]							
Bangladesh	✓[*1]							
Sri Lanka	✓[*1]							
Pakistan	✓[*1]							
Russia	✓[*1]							
UAE	✓[*1]							

UAE = United Arab Emirates, Lao PDR = Lao People's Democratic Republic.

[*1] Results of survey are summarised in the country report (Annex II).

[*2] Coverage of the research points indicate the points covered for the countries (e.g. 1. is '1.The current status of automobile recycling in the targeted countries').

The research conducted i) literature review, ii) interview survey, and iii) field survey in the target countries visited.

i. Literature review: Literature review, analysis of existing survey results and interviews, general overview of the countries surveyed, economic and social conditions, current status and problems related to automobile recycling, the status of the establishment of related laws and regulations, and the presence or absence of data were surveyed.

ii. Interview survey: The research team interviewed stakeholders such as experts and automobile manufacturers, recycling-related industries trading used cars and used parts, and automobile recycling companies.

iii. Field surveys: The study group conducted field surveys in Malaysia, Indonesia, Thailand, Myanmar and Viet Nam. Based on the information obtained through prior investigation in Japan, information about the following issues were collected through interviews of administrations/agencies/institutions in charge and related industries: the current state of automotive recycling such as automobile recycling-related businesses, and policies and legal systems in the target countries. The actual situation of automobile recycling, the enforcement of regulations (if there are laws), and the dissemination status of automobile recycling parts were investigated. Issues and problems in each country were also identified. The results of field surveys are provided in Annex III.

Two working group meetings were convened to review the results of the research as well as solicit feedbacks, including the current status, challenges, and policy direction of ELV systems. The first working group meeting on Asian ELV recycling was held on 2 April 2015 in Jakarta, Indonesia. During the first meeting, information on the current status of ELV recycling of member countries and the results of the preliminary survey of current status of ELV recycling in the target countries were shared. The second working group meeting on Asian ELV recycling was held on 21 August 2015 in Putrajaya, Malaysia. The second meeting provided supplementary information for discussion on ASEAN ELV recycling. The working group members discussed the challenges and expected measures, and proposed policy recommendations for ASEAN and the other Asian countries on expected measures to promote ELV recycling. Working group members shared the results of the studies and exchanged opinions about the future direction of ELV recycling systems in the Asian region. The working group members are government officials and experts with relevant knowledge on ELV in Asian countries. Representatives from relevant stakeholders such as industrial organisations also attended as observers. The reports of the first and second working group meetings are in Annex I.