Innovative reuse business in Automobile

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Innovative Reuse Business in KAIHO Sangyo

Japanese engines can run for over 600,000km.

Engines made by Japanese auto manufacturers are of the highest performance in its quality, mileage, and less break down.
Though they are designed to run for over 600,000 km, Japanese users dispose of after an average of 130,000 km.
Considering at this point, the engine can still run for about another 500,000 km, this is Mottainai.
This is why Japanese used engines keep quality.
①Manufacture's high technology ②Inspection
③Road condition ④Small country ⑤Nationality

Background of JRS by KAIHO Sangyo

In 2009, Kenya Government banned from importing used parts, because it contains like a junk.

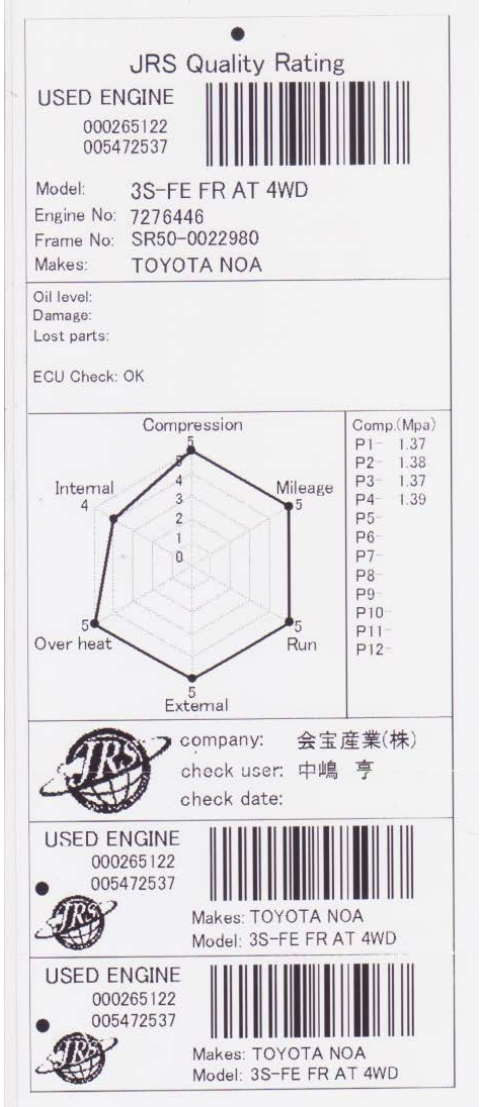
President Norihiko Kondo visited the Ministry of Justice in Kenya and insisted on the high technology of dismantling ELV at KAIHO Sangyo.

KAIHO Sangyo has developed JRS which is a standard for assessing the quality of used engines for export. It has been disclosed to be more transparent for fair transactions in the market.

JRS Tag

This is JRS/Japan Reuse Standard which has five-level assessment for six items including Compression, Mileage, Run, External, Over heat, and Internal.

The quality of engines is displayed in a reader chart that can be easily understood in any countries. It took about five years to achieve this type after tries and errors.



JRS tag

PAS777 (Publicly Available Specification)

KAIHO Sangyo aimed at getting more confidence and transparency of the quality of used engines in the international market.
In 2013, KAIHO Sangyo submitted its own technological specification JRS to the British Standard Institute (BSI), which was issued as the PAS777 in this year. Everyone can generally accept to use this PAS777 as a international standard.

The profit of KAIHO Sangyo shares 70 % from exporting engines and parts, which owe it to JRS and PAS777.

Auction Business at KME / KAIHO Middle East

KAIHO Sangyo opened the auction market of used engines and parts at Sharjah UAE in December 2014.

- It has been held 81 times auctions for about 2 years.

  Total Sales: 3,97million dollars

  Gross Profit(deduction of transportation charge and tariffs): 139thousand dollars

  After moving from restricted zone to free zone in July.

  Gross Profit(74～81th)：60thousand dollars (7 times)

  Total sales number of engine：7540 unit

- Parts： Aluminum wheel, Engine mount, Transmissions, Condenser, Dynamo, Fuel pump, Handle, Radiator etc.

Auction Business at KME

Main Bidders at KME are Pakistani, Bangladeshi, Afghan.
Destinations of goods are African countries (Nigeria, Kenya, Uganda), Saudi Arabia, Pakistan, Russia etc.

Many used parts from all over the world are collected in Dubai, after that African buyers transport them to their countries. Why is Dubai the largest Hub in the world? The reason is low tariff rate, for instance one container is about 1 thousand dollars in Dubai, which is compared with 15 to17 thousand dollars in Kenya. The location is also convenient from Africa, Middle East and Middle Asia.

KME Used Engine Place for auction

PAS777 and KME Used Engine Place for auction

ELV is illegally dumped in developing countries.

Many of the ELV/End of Life Vehicle that have been driven in developing countries are illegally dumped. The proper disposal and recycling of ELV in developing countries, which is forecasted to drastically increase in the future, has become a matter of urgency.

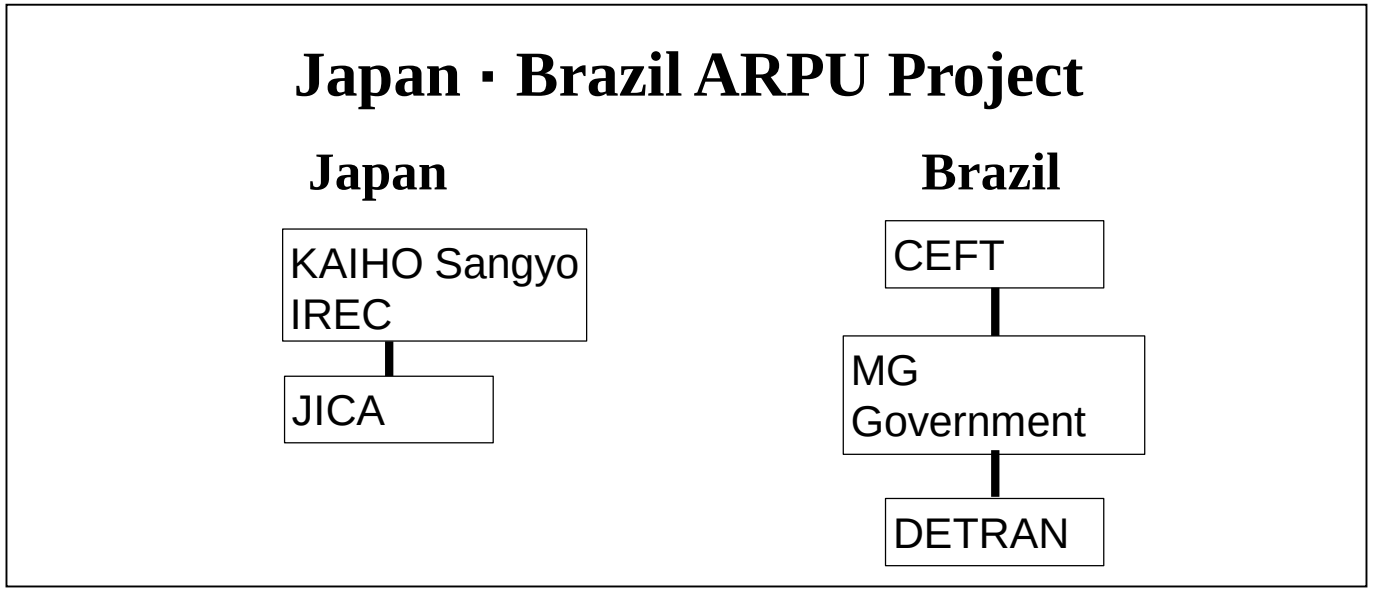
It needs launching auto-recycling business and proper disposal of ELV in these nations. We aim at building Circular Economy which circulate Arterial Industry and Venous Industry not only developed nations but also developing nations.

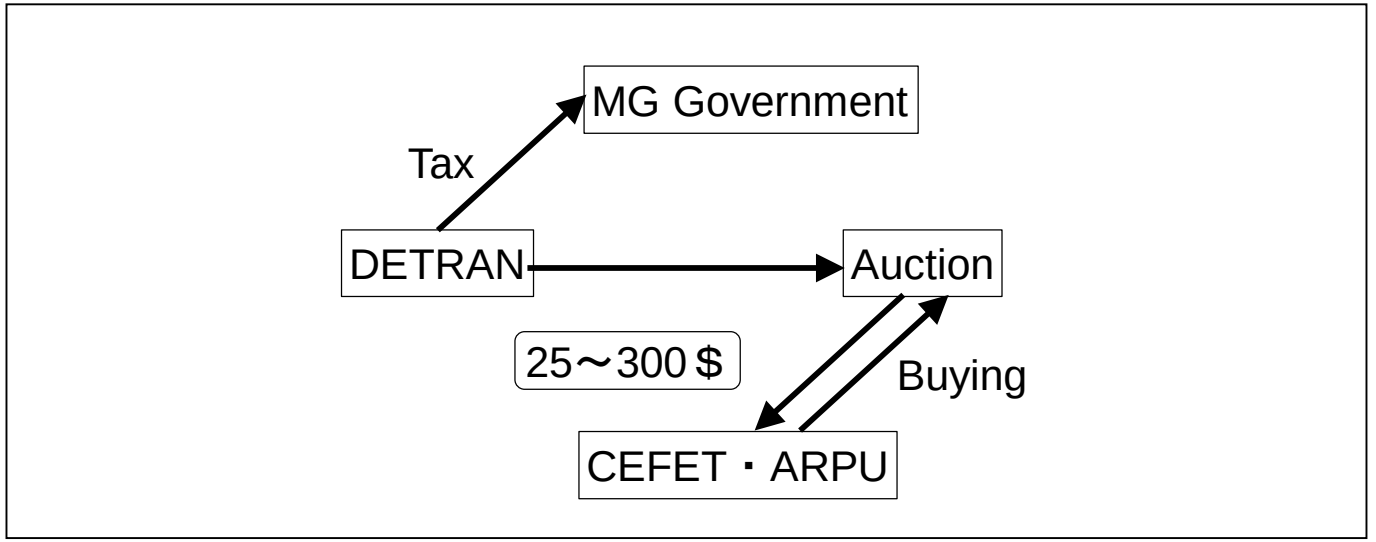
Dump site of ELV in Sao Paulo

CEFET in Minas Gerais State in Brazil

CEFET･MG/Center of Federal Education Technology in MG started the ARPU/Automotive Recycling Pilot Unit in MG in cooperation with JICA(Japan International Cooperation Agency) in 2013.
Prof. Daniel Castro and some members of CEFET visited Japan and took class on ELV recycling system and technology for three weeks at IREC with KAIHO Sangyo.
The class in CEFET･MG will start in June next year.
KAIHO Sangyo has been supporting on starting class and business from 2010.

Japan・Brazil ARPU Project





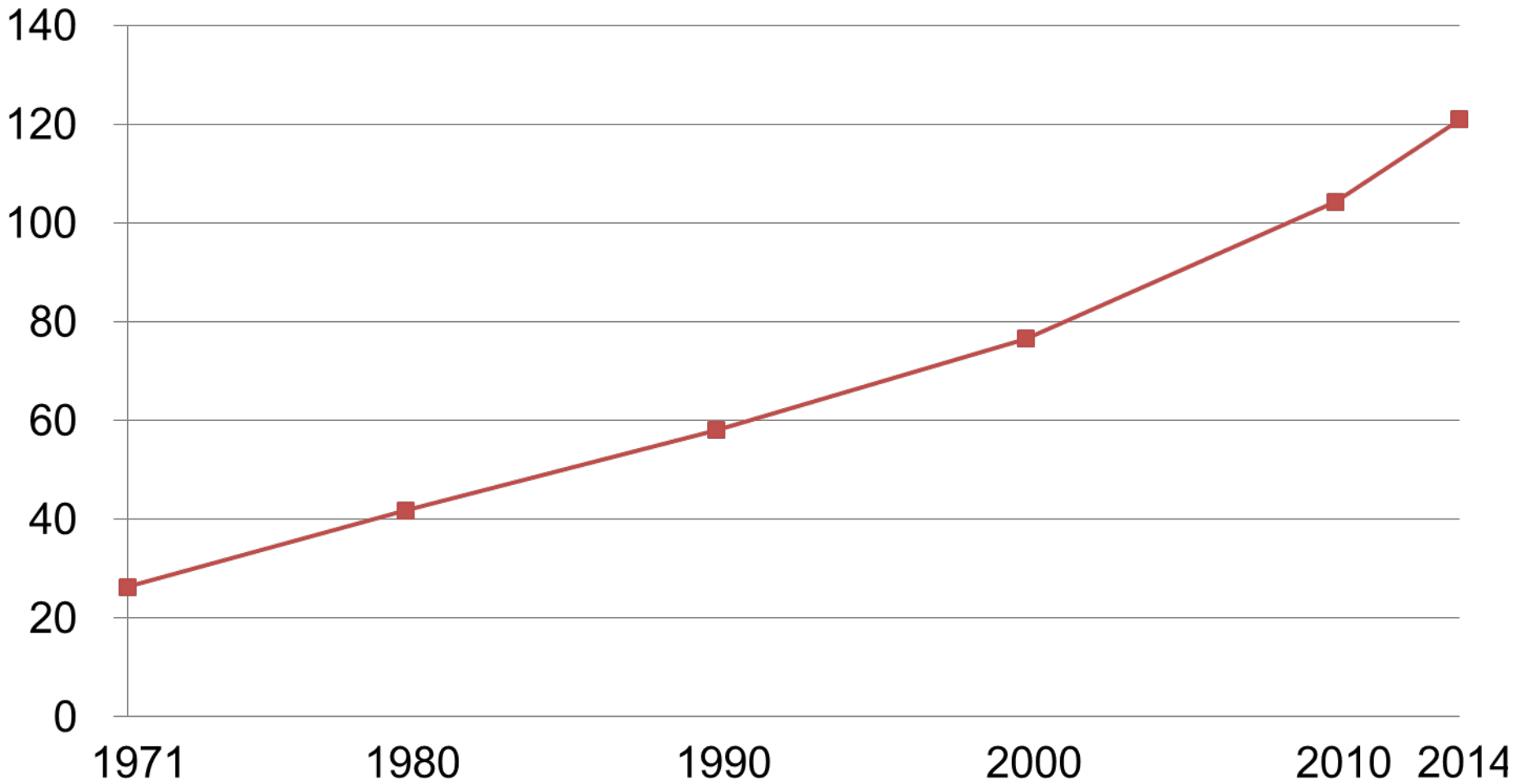
President of CEFET/KAIHO and staves at JICA

Data on ELV

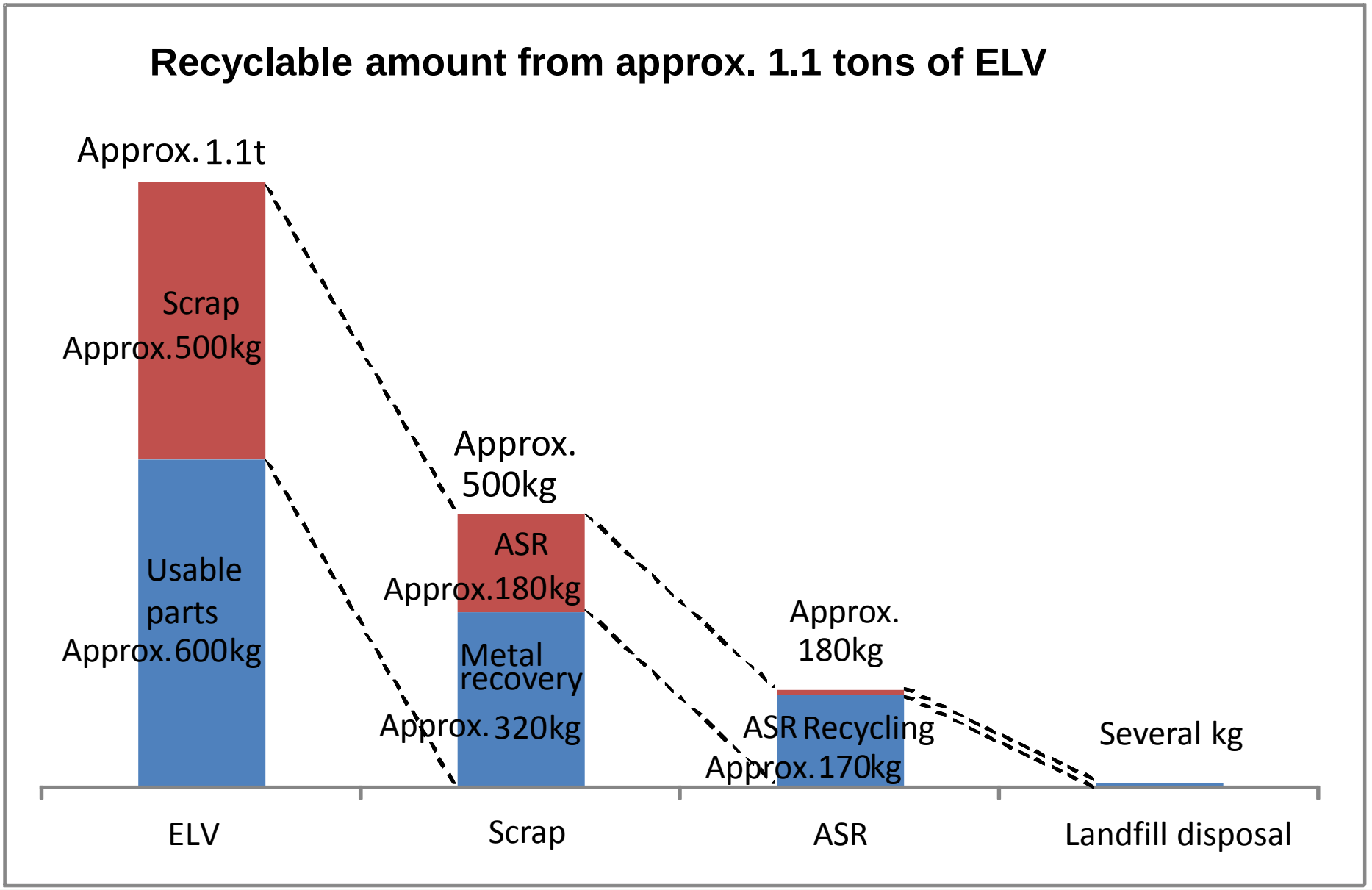
1.2 billion vehicles all over the world

Transition in Possession Number of Vehicles

Unit: Ten-million vehicles

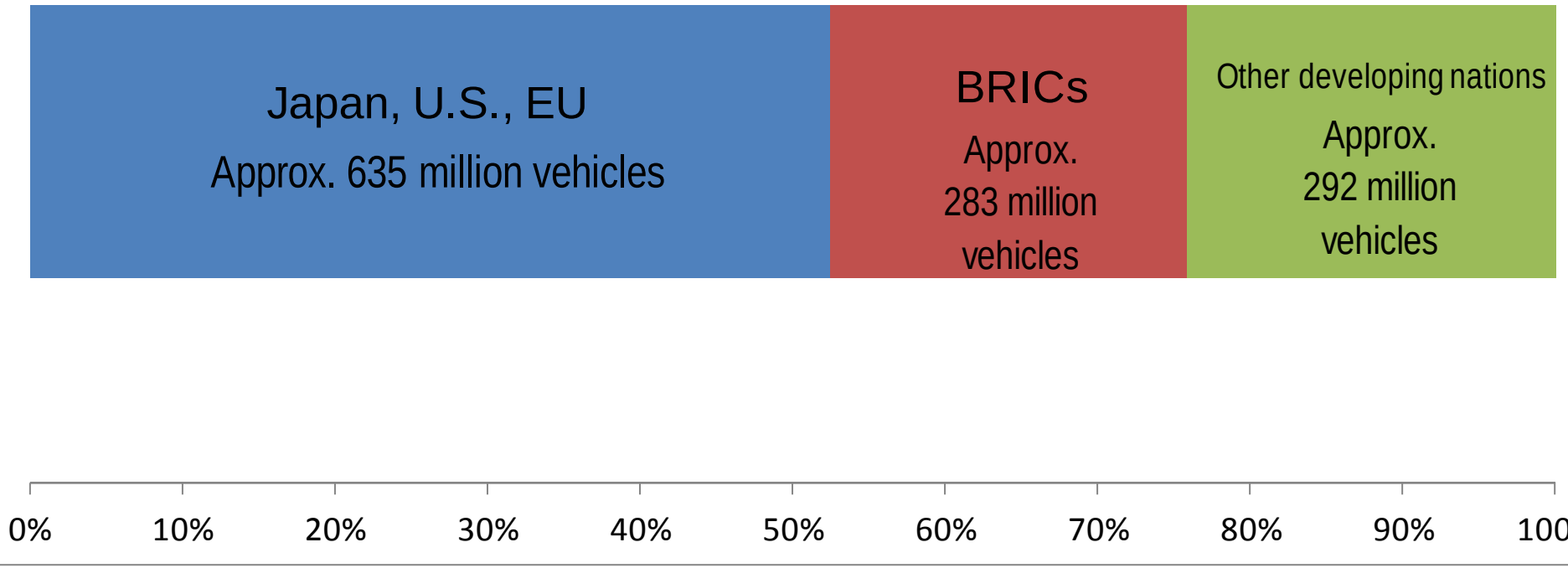


ELV Recycling Rate in Japan attains 99%.



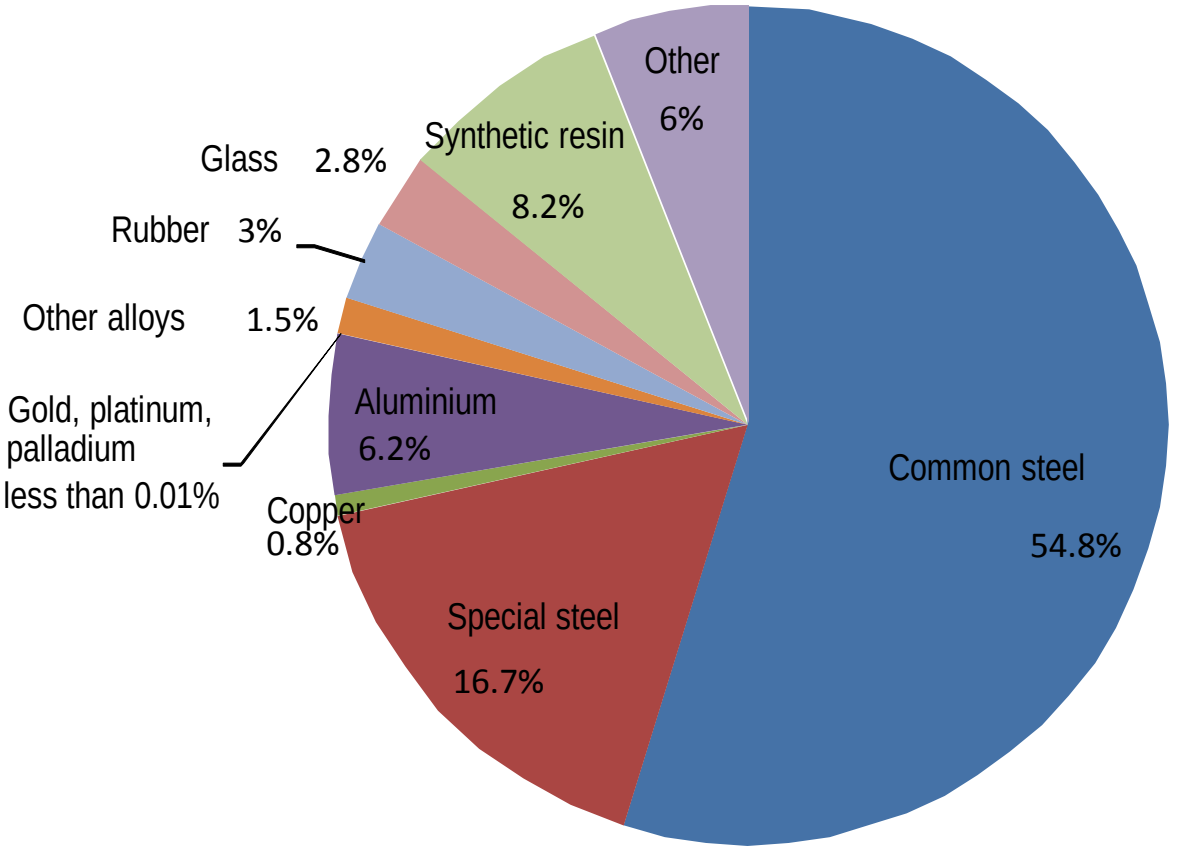
Share of Motor vehicle in the world

Share of Motor Vehicle (2014): Classification of approx. 1.2 billion vehicles



Material Composition of motor vehicle

Material composition of motor vehicles



[Steel] **787kg (71.5%)**
Common steel: 603kg
Special steel: 184kg
[Non-ferrous metal] **93kg (8.5%)**
Copper: 9Kg
Aluminium: 68kg
Gold, platinum, palladium: several grams
Other alloys: 16kg
[Non-metal] **221kg (20%)**
Rubber: 33kg
Glass 32kg
Synthetic resin: 90kg
(including approx. 44kg of PP)
Other: 66kg

Reference materials:
Japan Automobile Manufacturers Association (JAMA) research

Urban Mine Resources

ASR: 100 t → Soundproof material: 10 t
Glass plate: 30 t
Solid fuel: 40 t
Landfill: 20 t

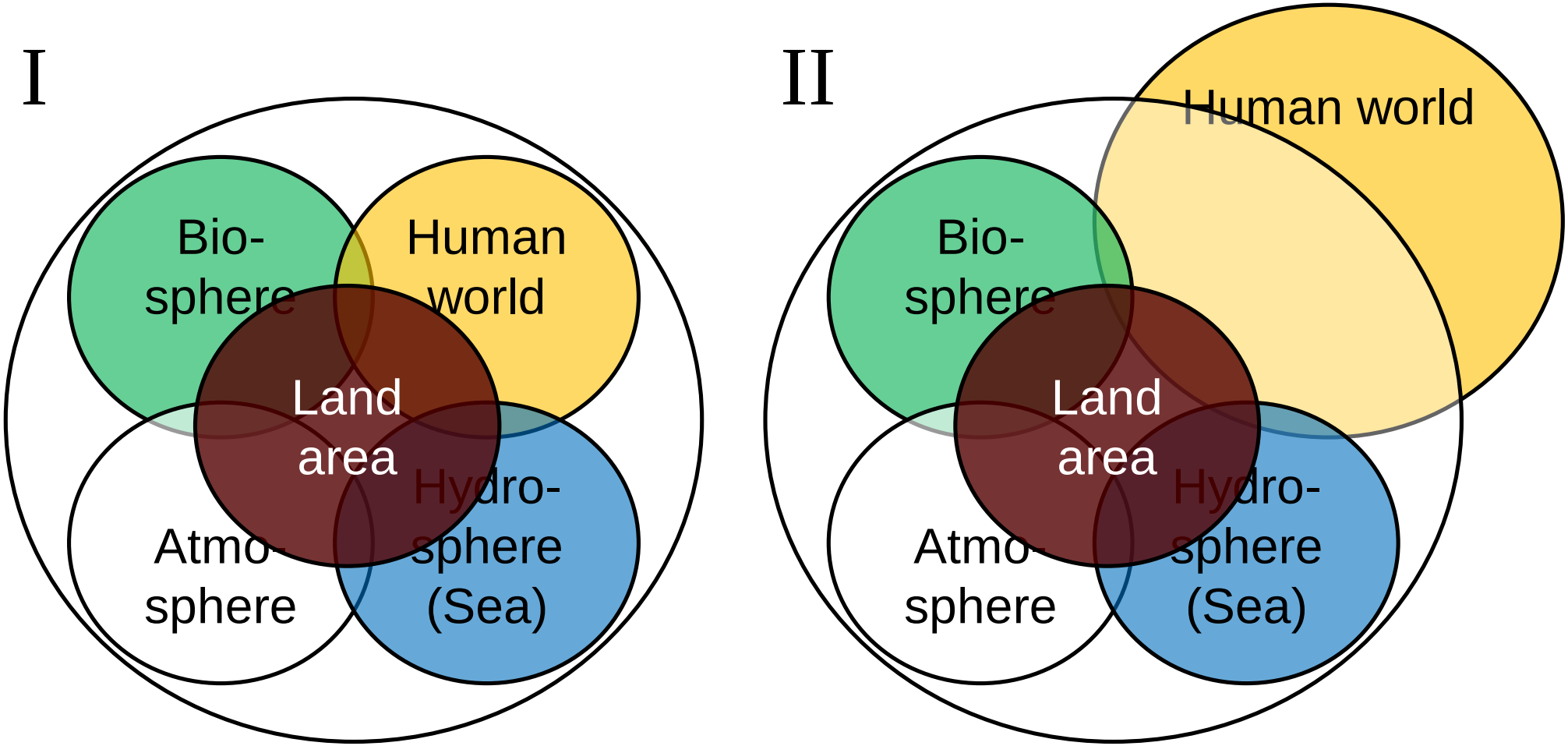
Cell phone: 1 t (10,000 units) → Gold: 280 g

Catalyst: 1 piece → Gold and palladium: 3 g

PC board → Gold, silver, and copper

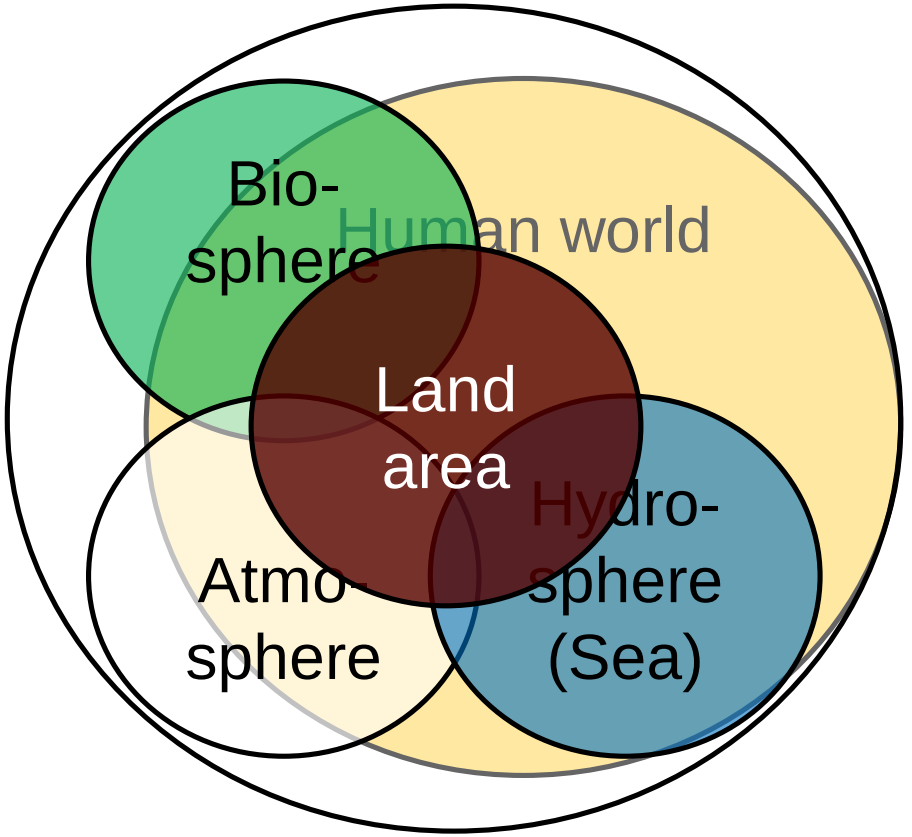
Contents of Automobile Shredder Residue/ASR

Global System in "Agricultural age" and "Material Civilization"



Source: Takafumi Matsui, "Global Environment Reader"

This is our Goal : Sustainable Global System in 21 century



Source: Takafumi Matsui, “Global Environment Reader”

Sustainable Development

- “Making, using and dumping product,” which is one-way linear industrial structure system without recycling.
- Industrial Revolution : Energy Revolution

  Coal, oil, and natural gas are nonrenewable energy.
- Circular Economy for sustainable development.
  - Saving energy: reduction of energy consumption
  - Increasing energy efficiency: technology and system
  - Circular economy: 3R(reduce, reuse, recycle)

K.Tsugumi “Rio + 20” at UN Conference

Thank You very much
for my presentation