

# Dumping site management contributes to GHG Reduction

[problems in terms of Climate Change]

Greenhouse gas(GHG, such as Carbon Dioxide(CO<sub>2</sub>) and Methane(CH<sub>4</sub>)) is emitted from many dumping sites in the world due to organic decomposition. In waste management field, CH<sub>4</sub> is normally collected and used it to generate energy. However, the techniques are impractical to many countries because of (1) high cost, (2)high skill, (3)long time required to use the closed dumping site as other purposes.



Source: [IPCC \(2007\)](#); based on global emissions from 2004.

[GHG emissions by sector] 3-4% GHG (70 million tonnes) each year is emitted at the Global level. GHG from dumping sites is approximately **60% CH<sub>4</sub>**, with the remainder being mostly CO<sub>2</sub>.

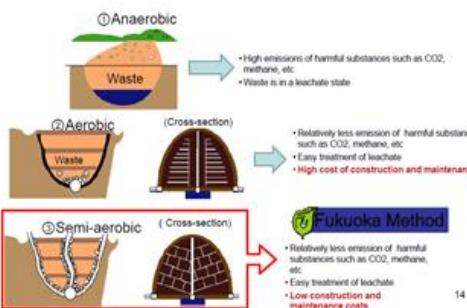


open dumping site (releasing CH<sub>4</sub> and CO<sub>2</sub> in the air)

[Global Warming Potential (GWP)] CH<sub>4</sub> is **25 times** more effective GHG than CO<sub>2</sub>.

## How to solve the problem Economically and Technically ? **Fukuoka Method!** What is it?

There are essentially 3 landfill methods



Construction phase of dumping site using FUKUOKA method



Example of reuse of completed landfill

### [Point to know about the Fukuoka Method ]

- (1)Initial investment and maintenance **cost is much lower** . (even bamboo or scrap materials can be available.)
- (2)Fukuoka method can reduce **more than 50%** of GHG compared to open dumping.
- (3)Reduce gas pressure in the ground and the chance of gas explosion
- (4)Compaction of waste - **reduce land consumption**
- (5) **less time requires for the reuse** of completed landfills (for vegetation, open space, parks, school, etc.)
- (6)enhance waste stabilisation, improve leachate quality and reduce the cost of final treatment of leachate
- (7)Leachate is discharged as soon as it is collected (**less pollution**)
- (8)**Verified in UNFCCC in 2011** as a new method of CDM.

(Fukuoka method is admitted as the method to restrain methane release for the first time in the world)

(9) Originally **developed in Japan**. However, the patent was not applied only to Japan but also to the world.

[COMMENT]Waste management is important but the more important is NOT to discard rubbish. Please keep in mind “**3R**=“**Reduce, Reuse, Recycle**”