

## **-Chapter 2: Natural Disasters and Sustainable Development**

UN organizations, various international institutions, and governments have placed importance on natural disasters and sustainable development. Hence, it is of paramount importance to analyze disaster trends in relation to variables of sustainable development, mainly human development and economic factors of the countries, especially the disaster affected ones. Following sections will discuss these trends with appropriate graphs.

### **2.1 Human Development and Natural Disasters:**

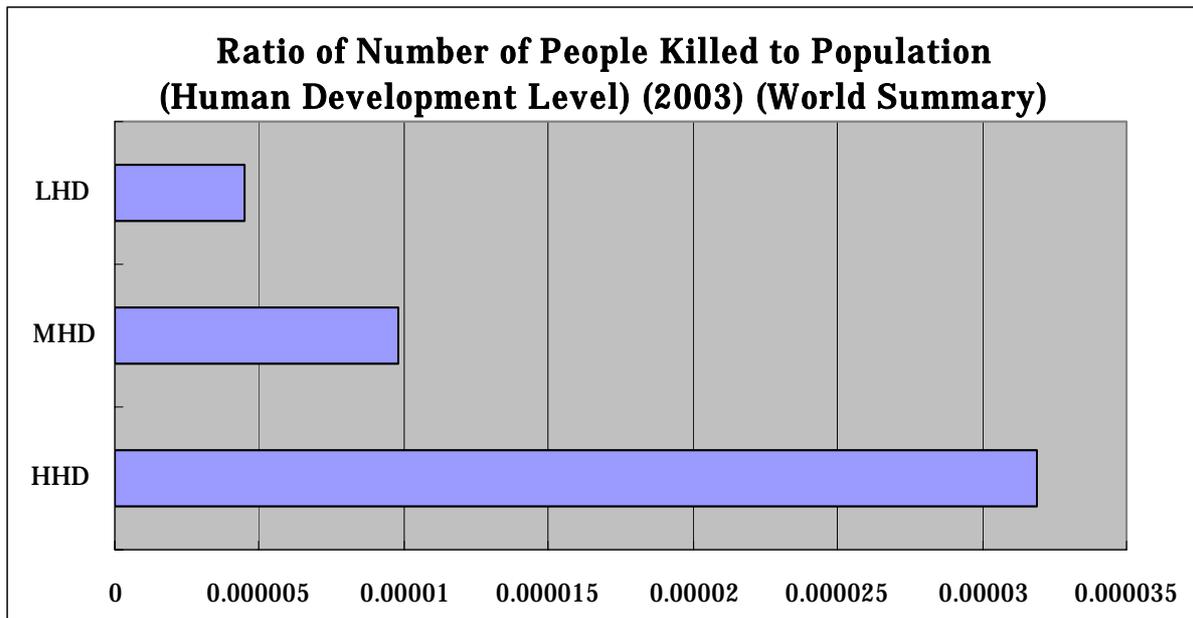
The Human Development Level of a country refers to the literacy rate and gross school enrolment rate, per capita income, and health quality of that country. These variables are significant to disaster mitigation, preparedness planning, and disaster reduction and management strategies. Higher Human Development Levels will make these planning and management strategies and follow-up activities easier even in post disaster periods. Human Development Levels are categorized as high (Human Development Index; HDI above 0.8), medium (HDI between 0.5 and 0.79) and low (HDI less than 0.5), in accordance with UNDP specifications. In this section, disaster characteristics are subsequently calculated according to these Human Development Levels.

Income levels are also categorized as high (per capita income US\$ 9,266 and above), upper middle (per capita income US \$2,996~US \$9,265), lower middle (per capita income US \$756~US \$2,995) and lower (per capita income less than US \$755) according to World Bank definitions. Disaster characteristics are identified in accordance to these income level specifications. The following figures illustrate these factors at world and Asian regional levels.

Figure 9 to 12 indicate the relationship between the Human Development Level of the country and the impact of human suffering from disasters on society. Accordingly in 2002, it was quite

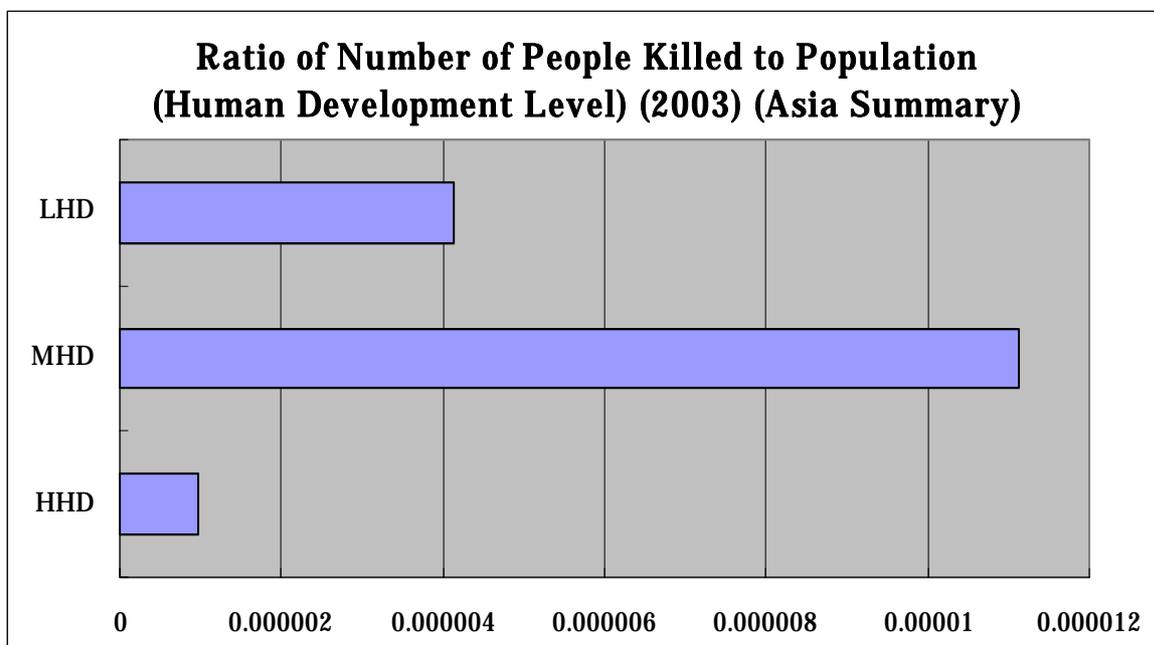
evident that human loss and suffering were considerably higher in countries with low human development (LHD) as the ratio of those killed and affected by disasters to total population in LHD countries was considerably higher than medium human development (MHD) or high human development (HHD) countries. But in 2003 this trend is changed drastically for World perspective. Due to the unexpected heat wave in the HHD countries in Europe, there were huge human sufferings in those countries. Since the human development index is considered for literacy rate, life expectancy, and the per capita income, improvements, these variables could contribute immensely to reducing the impact of natural disasters in a country. Though in 2003 HHD countries suffered much human loss in relation to their population size, it is seen here that developing and under developed countries mostly possess low and medium Human Development Levels in Asia and throughout the world, causing elevated levels of human loss in these countries thus urging better disaster management approaches in these regions. It is also quite evident from the following figures that the ratio of *totally* affected people to population is still high in the MHD and LHD countries stressing the importance of mainstreaming the disaster reduction issues into national policy.

Figure 9:



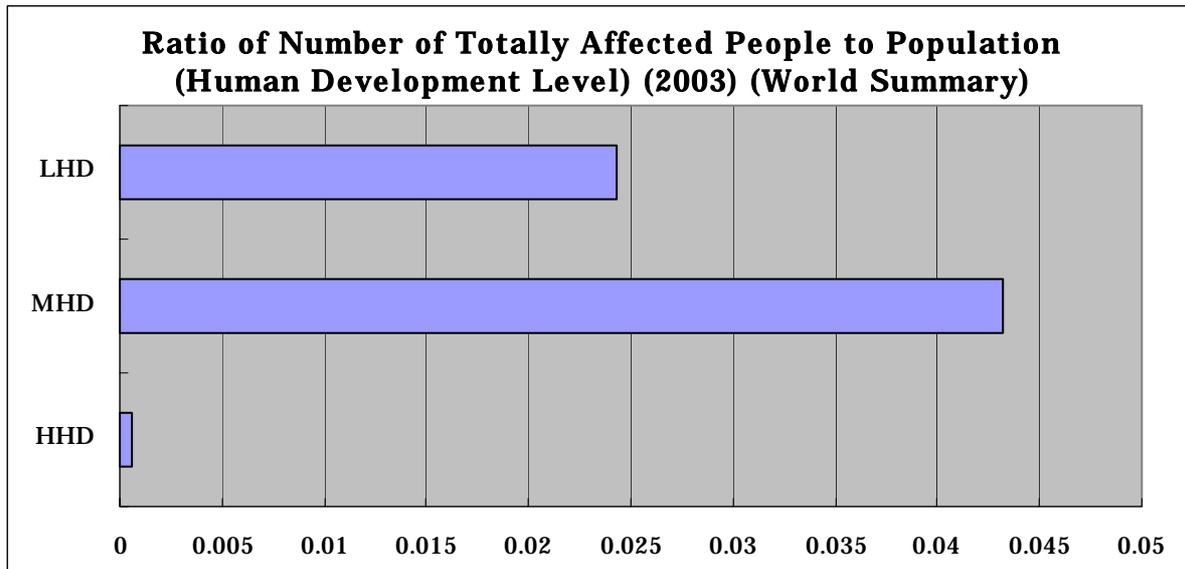
Source: ADRC, Japan, CRED-EMDAT, Universite Catholique de Louvain, Brussels, Belgium and UNDP, 2003

Figure 10:



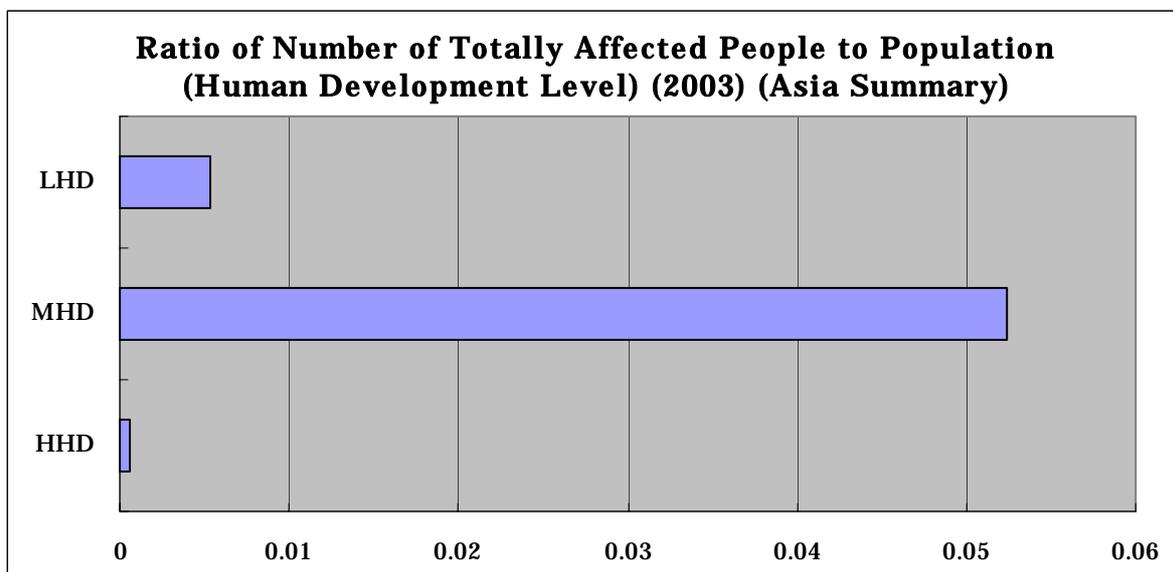
Source: ADRC, Japan, CRED-EMDAT, Universite Catholique de Louvain, Brussels, Belgium and UNDP, 2003

Figure 11:



Source: ADRC, Japan, CRED-EMDAT, Universite Catholique de Louvain, Brussels, Belgium and UNDP, 2003

Figure 12:



Source: ADRC, Japan, CRED-EMDAT, Universite Catholique de Louvain, Brussels, Belgium and UNDP, 2003