BACKGROUND DOCUMENT

SMART SUSTAINABLE DEVELOPMENT MODEL INITIATIVE

INTRODUCTION

Information and communication technologies (ICTs) have the potential to to develop communities and countries while at the same time saving lives. The Smart Sustainable Development Model (SSDM) Initiative is about transforming this potential into reality.

As the United Nations specialized agency for telecommunications/information and communication technologies (ICT), the International Telecommunication Union (ITU) believes that meaningful development should take into account disaster risk reduction and effective disaster management measures.

There are a number of initiatives by governments, international organizations, and private sector firms, etc. aimed at ICT for Development (ICT4D) and those by other entities aimed at disaster preparedness and response.

However, a clear link still remains to be made between ICT for Development (ICT4D) and ICT for Disaster Management (ICT4DM) to optimize the use of resources.

The SSDM Initiative, in this regard, seeks to match and marry all ICT4D and ICT4DM activities being undertaken by all players for sustainable development.

SSDM initiative will create a platform for sharing information, expertise, knowledge and best practices driven by its distinguished Advisory Board.

"Sustainable development calls for solid, long-lasting and well-thought partnership arrangements.

I call upon like-minded organizations to join us in linking ICT for Development with ICT for Disaster Management activities because genuine socio-economic development can fast track us to optimal deployment and use of scarce resources."

Brahima Sanou,

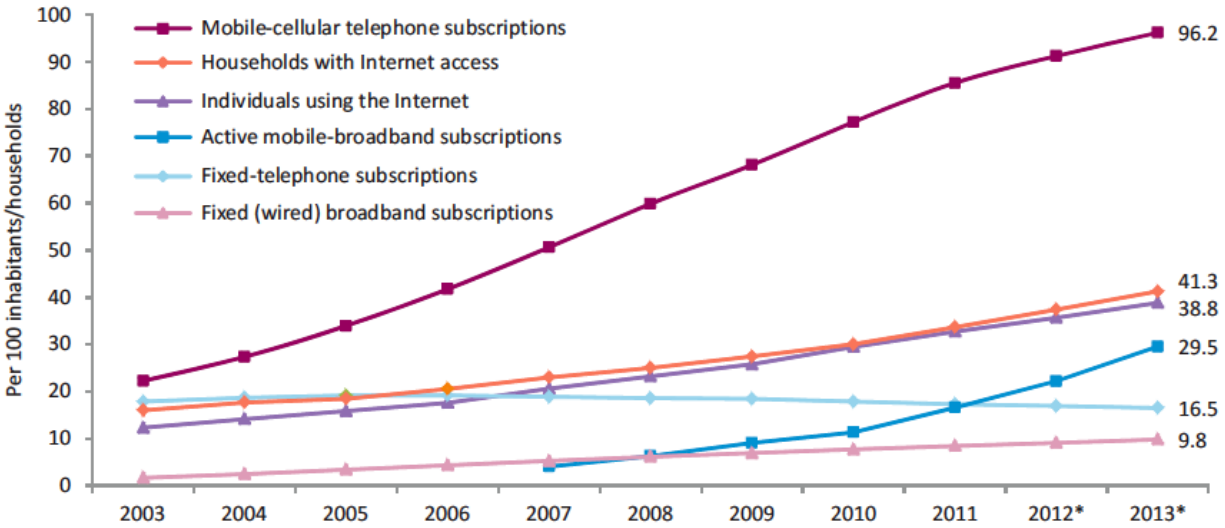
Director of the Telecommunication Development Bureau

1. GLOBAL ICT TRENDS

An increasing number of people are joining the global information society and high-speed communication networks are becoming indispensable infrastructure for development (ICT4D)

As more and more people join the global information society and high-speed communication networks become an indispensable infrastructure, the tracking and measurement of developments in information and communication technologies (ICTs) remain as relevant as ever. According to ITU estimates, there will be 6.8 billion mobile-cellular subscriptions by the end of 2013 – almost as many as there are people on the planet.

Chart 1: Global ICT Developments 2003-2013



Mobile broadband has been the fastest growing market segment over the past few years, with a 40 per cent average annual growth since 2007. It is growing rapidly not only in developed but also in developing countries, where subscriptions doubled over the past two years and now outnumber subscriptions in developed countries. Even in Africa, penetration rates will reach almost 11 per cent by the end end of 2013, up from 2 per cent only three years earlier, and will continue to grow strongly.

In view of the steep growth of mobile broadband and the widespread deployment of mobile infrastructure, expectations are high that mobile-broadband services will become equally as available as mobile-cellular telephony in the near future. Today, almost all everyone lives somewhere within reach of a mobile-cellular signal. In the large majority of countries, 3G services are now commercially available, at least in major urban areas. As networks are being upgraded and services accordingly offered in the market, mobile-broadband subscriptions will continue to grow strongly.

Not all of those networks, however, have been upgraded to 3G technology, which is necessary to qualify as mobile broadband and provide high-speed access to the Internet. By end 2012, the percentage of the world's population covered by a 3G network was around 50 per cent. ITU estimates that, by end 2013, there will be around 2 billion mobile-broadband subscriptions, corresponding to a global penetration rate of almost 30 per cent.

On the revenue side, the size of the telecommunication market is increasing, in line with developments in terms of ICT access and uptake. From 2007 to 2011, total telecommunication revenues grew by 12 per cent, climbing to USD 1.8 trillion, or 2.6 per cent of world GDP. Over the same period, the developing countries' share of total telecommunication revenues increased from 26 to 30 per cent, highlighting the growing importance of the telecommunication sector in its own right for the economic growth of the developing world. However, given that the developing economies' combined share of global GDP stands at around 35 per cent, there is still room for further telecommunication sector growth in developing countries. Future revenue growth in developing countries could be fuelled by accelerating broadband deployment, thereby reaching more people, and by increasing the intensity of use of telecommunication services, for instance through bundling.

1.1 Emergence of Digital Natives

A distinct and recognizable global population of young people who were born into the digital age, are growing up using ICTs in their daily lives. This population of networked youth is often referred to as digital natives.

According to ITU, in 2012 there were around 363 million digital natives out of a world population of nearly 7 billion. This means that 5.2 per cent of the world's population and 30 per cent of 15-24 year olds engaged in sustained activity online. It is expected that the digital native population in the developing countries will more than double within the next five years.

1.2 Gender Gap Closing

ITU has been tracking indicators that capture the use of ICTs disaggregated by sex since 2007. Available data show that the gender gap in the use of computers, mobile phones and Internet is closing. However the gap is more prevalent in developing than developed countries. For example, by the end of 2013, ITU estimates that the gender gap in Internet usage will be 11 per cent globally, 2 per cent in developed countries and 16 per cent in developing countries. This corresponds to 1.3 billion women and 1.5 billion men.

1.3 A Step Closer towards Universal Access

There is evidence that ICTs have become ubiquitous; young people have fully embraced ICTs particularly in the 15-24 age group and the gender gap is narrowing. These three factors create fertile ground for the launch and implementation of the Smart Sustainable Development Model in as far as access issues are concerned.

2. DISASTERS: A GLOBAL CHALLENGE

Disasters leave a legacy of lost or broken lives and huge economic damages. Therefore, any development agenda should take ICT4DM into account.

1.2

MILLION

LOST LIVES

2.9

BILLION

AFFECTED

1.7

TRILLION

ECONOMIC LOSS (USD)

2.1 Challenge for Humanity

Disasters disrupt national economies, severely weaken the poor and vulnerable communities. Disasters are recognized as major impediments to sustainable development and reduction of poverty especially in Least Developed Countries (LDCs) and Small Island Developing States (SIDS). The impact is even worse for those living in remote and isolated areas with no access to basic information and communication facilities that are essential to providing vital and alerting information to saving lives.

In view of emergencies and disasters, telecommunications/ICTs play very important role in all phases of disaster management including disaster preparedness, early warnings, response, relief and rehabilitation. In particular, the dissemination of early warnings to local communities in a timely manner is crucial for mitigating the impact of disasters. The efficiency and availability of emergency telecommunication services help save lives and reduce the devastating effects of disasters.

2.2 Challenge for Economies

In the face of disasters the competitiveness and sustainability of economies can be severely compromised with long-term negative impacts.

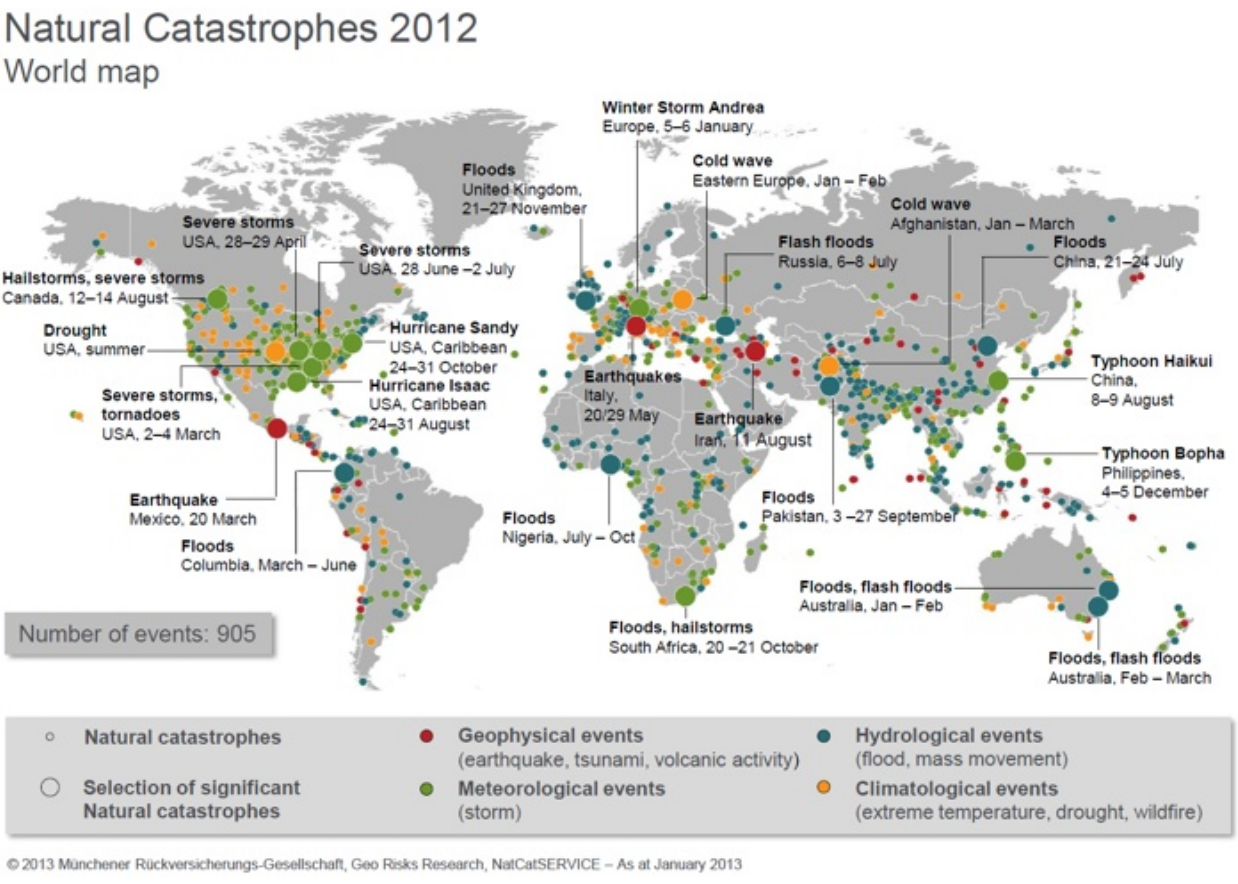
Globalization of trade, financial markets and supply chains have increased not only the interdependence of economies, but also posed new risks to interconnected economies. When disasters occur in globally integrated economies, the impacts can ripple through regional and global supply chains, thereby causing indirect losses to businesses on the other side of the globe.

Some regions that are successfully attracting investment and have seen the largest increase in foreign direct investments are also exposed to disasters such as earthquakes, tropical cyclones and tsunamis.

As such, benefits to business from globalization have also been accompanied by major boosts in population and in the value of assets in disaster-exposed areas such as tsunami and cyclone-prone coastlines, flood-prone river basins and earthquake-prone mega-cities.

Countries increasingly become more exposed to the effects of disasters taking place different parts of the world. In the existence of global economies, supply chains and free flowing foreign direct investments, risks are greater than they used to be in the past. These risks and the resulting costs are often transferred to and shared with other economies, locations and populations, thus leading to a massive global impact.

In light of the above, disaster management should be part of any development agenda. Emergency telecommunications should be viewed as integral part of the development effort activities. Projects/actions need to be undertaken to integrate telecommunications/information and communication technologies in disaster prediction, detection and alerting. This dovetails with the United Nations Hyogo Framework* on disaster risk reduction which was adopted by world leaders for the decade 2005-2015.

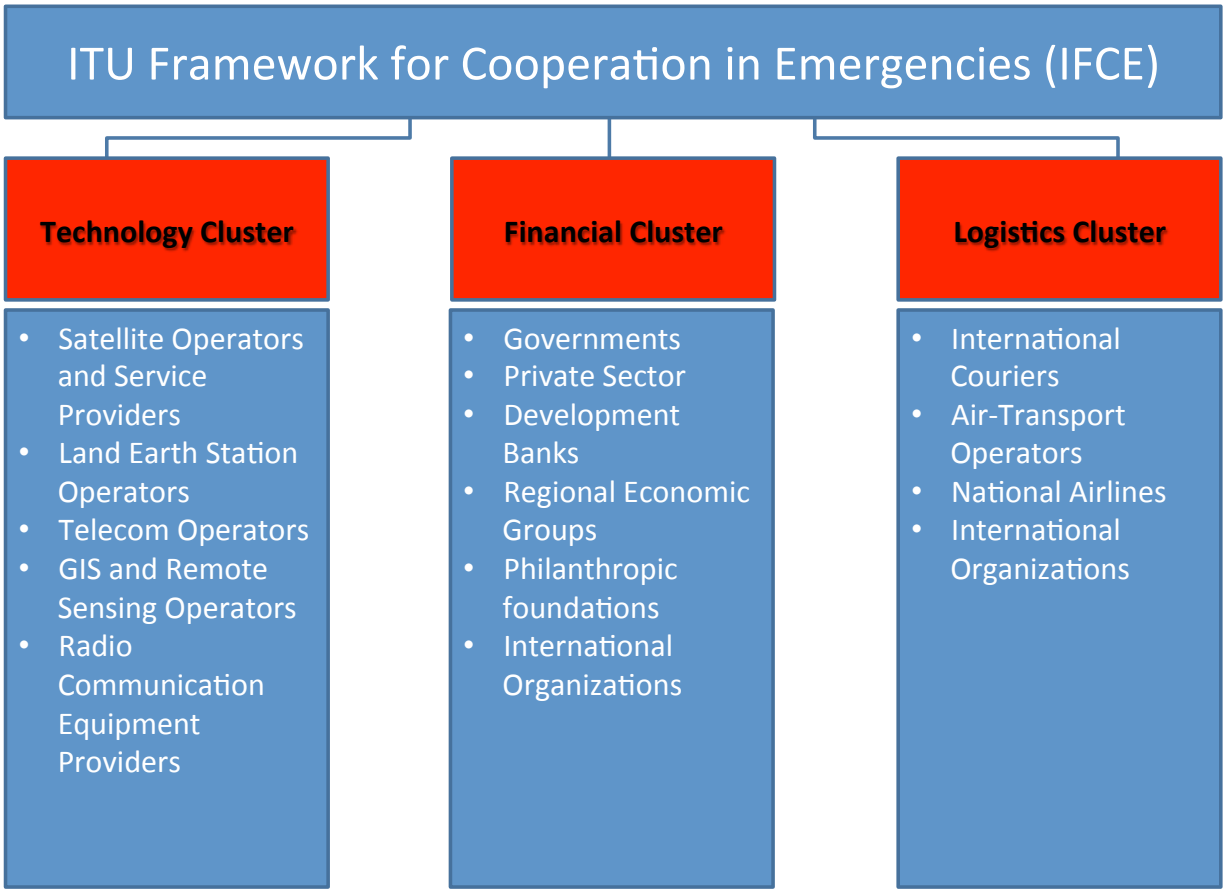


* The Hyogo Framework for Action (HFA) is the first plan to explain, describe and detail the work that is required from all different sectors and actors to reduce disaster losses. It was developed and agreed on with the many partners needed to reduce disaster risk - governments, international agencies, disaster experts and many others - bringing them into a common system of coordination. The HFA outlines five priorities for action, and offers guiding principles and practical means for achieving disaster resilience. Its goal is to substantially reduce disaster losses by 2015 by building the resilience of nations and communities to disasters. This means reducing loss of lives and social, economic, and environmental assets when hazards strike.

3. POWER OF PARTNERSHIPS

Cooperation among organizations involved in disaster prevention and management is essential. To this end, ITU designed a strategic initiative, a Framework for Cooperation in Emergencies (IFCE), to primarily deliver and deploy telecommunications/information and communications resources to countries, humanitarian actors, and victims of disasters in a timely manner whenever and wherever disasters may occur through the use of transportable, easy to deploy, and reliable systems that are non-exclusive. Principally, the IFCE extends its services to all phases of disaster management thus covering the periods before, during, and after disasters. The IFCE has three basic clusters/pillars:

Chart 2: Clusters of ITU Framework for Cooperation in Emergencies



1. Technology Cluster: This cluster consists of Satellite Operators and Land Earth Station Operators, Telecommunications Operators especially Mobile Service Providers, Geographical Information System (GIS), Remote Sensing Organizations and providers for the assimilation and dissemination of preplanned, historical and real-time information before, during and after disasters. This is a critical element especially for providers of telecommunications/ICT services and applications who may want to determine the vulnerability of telecoms networks (before disasters and create basic "what-if" scenario analyses), and damage to the network (in the aftermath of disasters). This will include the Internet based GIS that, thanks to the integration of the GIS and the Internet technology can be used to significantly increase the usage and accessibility of the spatial data, which is a key requirement before, during and after any disaster. The approach allows several agencies operating on different technology platforms and using different communication channels to use the Internet to collaborate while managing the natural disasters like cyclones, earthquakes, volcanoes, etc.

2. Finance Cluster: This focuses on potential sources of finance that may contribute towards the creation of a standby fund that will be used when disasters strike. These include Governments, Development banks, Private Sector, United Nations Organizations, Regional Economic Groups etc.

3. Logistics Cluster: This constitutes providers of other support services such as transportation of telecommunications/ICT equipment to and from sites of disasters. This includes Air Transport Operators, International Couriers.

ITU is actively forging partnerships with the public and private sector to finance activities related to disaster mitigation with the aim of saving lives. In line with this, ITU has signed many partnerships with public and private companies such as Iridium, Inmarsat, Thuraya, Qualcomm, Industry of Canada, UNOSAT, FeDex, among others, that have reinforced the capability of ITU to respond to emergencies and have strengthened the IFCE on each of its clusters.

The deployment of satellite terminals and other emergency telecommunications equipment is possible within 24 to 48 hours in the aftermath of a disaster to help restore vital telecommunication links between stakeholders involved in response and recovery operations. ITU pays for the Satellite air time for voice and data. The agreement allows a country or other UN organization to use the equipment for 3 months after which the equipment is returned to ITU. In exceptional circumstances, ITU can agree to a request to keep equipment for a further 3 months.

Drawing lessons from the IFCE, the SSDM could build its work on a foundation of solid partnerships aimed at win-win results. Below are some of the key partnerships that have driven ITU's successful work in helping to save lives.

4. ITU'S RECENT INTERVENTIONS

Thanks to the contributions made by ITU's partners, the following recent interventions were successfully made by ITU:

Haiti: ITU deployed satellite mobile telecommunications equipment immediately after an earthquake of magnitude 7.0 devastated and caused untold misery in the country. The units were used to re-establish basic communication links and a further broadband satellite were deployed, along with experts to operate them. A Deployable Base Station was also set up which gave a reliable, responsive and complete cellular system designed to enable vital wireless communications aimed at strengthening response and recovery mechanisms in a disaster zone. WiMAX network and sets of mobile mounted satellite terminals provided high-speed on-the-move Internet connectivity. The airtime was paid for by ITU.

Japan: Satellite mobile telecommunications equipment was deployed to areas severely affected by the tsunami that struck the coastal areas of Japan following the devastating earthquake that measured 9.0 on the Richter scale. The equipment was used to assist in search and rescue operations during power outages and in the re-establishment of vital communication links. ITU paid for the airtime.

Chile: Satellite mobile telecommunications equipment was deployed following the earthquake that struck the country. The equipment was used to coordinate search and rescue operations and deliver basic logistics and services from humanitarian workers. ITU paid for the airtime.

Indonesia: A hybrid of broadband satellite terminals were deployed to the country in an effort to restore vital communication links in the aftermath of a tsunami triggered by a 7.7-magnitude earthquake and a volcanic eruption that hit the Indonesian archipelago in two separate incidents. ITU paid for the airtime.

Pakistan: Following severe floods, satellite mobile telecommunications equipment was deployed in order to restore critical telecommunication resources urgently needed to assist in the humanitarian and relief work. The equipment was used by the authorities to coordinate human logistics on the ground, provide basic communications for humanitarian actors and for setting up tele-medicine facilities to benefit the victims. ITU paid for the airtime.

Malawi: ITU deployed satellite mobile telecommunications equipment to be used for disaster preparedness activities during anticipated rainy season that could have caused a massive disaster in Malawi's flood prone districts. ITU paid for the airtime.

Cape Verde: Emergency telecommunication equipment was deployed to enhance disaster preparedness in Cape Verde as Mount Fogo, on the island of Fogo, showed signs of possible volcanic eruption. ITU paid for the airtime.

Uganda: ITU deployed satellite mobile telecommunications equipment to aid in relief and response efforts following floods and mudslides caused by heavy rains. ITU paid for the airtime.

Mali: ITU in cooperation with UNHCR (United Nations High Commissioner for Refugees) and WHO (World Health Organization) deployed satellite telecommunications equipment from ITU intended to be used for response and relief activities in the humanitarian crisis in Mali. ITU paid for the airtime.

Peru: Following the devastating earthquake measuring 7.9 on the Richter scale that struck Southern Peru on 15 August 2007, killing more than 500 people and injuring as well as displacing thousands more, ITU deployed satellite terminals to help restore vital communication links in remote and underserved areas.

Surinam: ITU deployed satellite terminals to Suriname in response to a request for assistance by the government following a disaster. The equipment facilitated timely flow of information among humanitarian workers in the field. The satellite terminals that were charged by solar panels support voice, high speed data and video applications.

Kyrgyzstan: ITU deployed satellite telephones to help restore vital communication links in the region. The 6.6-magnitude quake that killed and injured many residents especially in the high-altitude village of Nura, also destroyed buildings and infrastructure

Mali: ITU provided both Thuraya hand-held satellite phones and Inmarsat Global Area Network (GAN) satellite terminals to Zambia to assist officials in their relief efforts after severe floods inundated low-lying districts across Zambia. Nearly 400 000 people in 19 districts across the country were affected, with as many as 36 000 inhabitants displaced.

Bangladesh: ITU deployed satellite terminals in Bangladesh to assist in relief efforts in the aftermath of terrible monsoon flooding. According to government figures, 5 million people were displaced or marooned by the floods. Many homes were left damaged or completely uninhabitable.The satellite terminals were used to coordinate relief and rescue activities in the worst hit areas.

Indian Ocean tsunami hit countries: ITU deployed satellite telephones to following an earthquake and devastating tsunami that hit Samoa on the 29th September 2009 resulting in the loss of lives and infrastructure damages.

5. POTENTIAL INITIATIVES BY THE ADVISORY BOARD

SSDM seeks innovation and new approaches to match ICT4D and ICT4DM while forging solid partnerships.

Bringing in eminent individuals and leaders in the ICT sector to engage in the SSDM is the first step in the right direction. The work of the Advisory Board could have a very positive impact on the future. In that future, business, government and the humanitarian community could work together from the first stage of investing into the ICT Sector to the stage of earning return on investment being matched with the first stage of disaster risk reduction to preparedness and disaster response.

The Advisory Board needs to identify key areas for improvement, finding solutions that are cost effective and feasible and facilitate joint action. In line with this, two main issues need to be tackled in order to push the initiative forward. The first is enhancing, scaling up or extending the capabilities of existing projects. Actions will involve planning and coordinating around shared interests and interdependencies to exercise the entire range of disaster management capabilities. The second is devising innovative approaches within the existing SSDM framework i.e. alternative models to meet the challenging confluences of social, technological, environmental, economic, and political factors and conditions. This approach also seeks to take into account the development of emerging technologies. Considering this, the following proposals are presented for the consideration of the Board:

1. **How could the Advisory Board develop viable business models?**

In order to come up with concrete outcomes the Advisory Board may want to recommend some viable business models that link ICT4D and ICT4DM.

2. **How could we finance the implementation of SSDM related activities/projects?**

Experiences could be shared by Advisory Board Members. Business leaders could present their vision on how **Corporate Social Responsibility (CSR**) could contribute to the SSDM. Governments and humanitarian entities could show how businesses could participate and contribute to humanitarian efforts. Telecommunication Regulatory Authorities could contribute with **Universal Service Funds**. Could financial entities such as Western Union, MasterCard, Visa charge surcharge on **Remittances** and contribute to a fund driven by the SSDM initiative which could be used to finance emerging projects and activities? Could telecom operators levy a fee on each **sms** sent and contribute to the fund?

As another solution, an arrangement that resembles how insurance funds are managed could be set up. In such a scenario a region creates a fund managed under the umbrella of the SSDM initiative. Each country could contribute an agreed amount every year. When one country is affected by a disaster, financing for disaster response could come from that fund instead of waiting for pledges.

3. How could local volunteers participate in activities related to SSDM?

As ICT projects are developed and implemented, capacity building should be in two parts. First, it could focus on the use of ICTs for socio-economic development. Second, it could focus on disaster risk reduction, early warning and disaster response. The idea being that, local users of ICTs who primarily work to earn a living from these technologies should act as first responders when disasters strike so as to save lives. What would be a working mechanism to get this off the ground? Could Local Volunteers on Business and Emergency Telecommunications (VOBET) be a solution?

4. What could be the drivers for SSDM?

Reports could be produced how better policy, legal and regulatory regimes could play a catalytic role in achieving the goals and objectives of the SSDM. Could a tax exemption be granted to private sector entities that demonstrate commitment and concrete contribution to the SSDM ideals?

6. SUGGESTED WORKING MECHANISMS

In between the physical meetings of the Advisory Board, members could undertake their work in Working Groups best on themes and topics agreed by the first meeting of the Advisory Board. Discussions through social media could also be explored for cross-Working Group exchange of information and discussions. Each of the Working Groups could be led by a Facilitator selected by the first meeting of the Board.

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