

A world map with a light green tint. A red target icon with three concentric circles is centered over the country of Bangladesh. The text "Harnessing submarine and satellite for broadband connectivity" is overlaid on the map in a bold, green, sans-serif font.

# Harnessing submarine and satellite for broadband connectivity

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Decorative wavy lines at the bottom of the slide, consisting of a light green wave above a white wave, which is above a darker green wave.



# Introduction

- Broadband penetration in Bangladesh:
  - Fixed
  - Mobile
- To minimize digital divide and provide broadband services up to rural areas, a strong national backbone is necessary.
- The technologies providing long-haul transmission, such as fiber optic cable and satellites, typically have very high investment costs. But, they have very low incremental costs to accommodate additional users.
- These technologies also enable carriers to activate additional capacity on an incremental, graduated basis as demand grows.



# Submarine in Bangladesh

- Member of submarine cable consortium SEA-ME-WE-4
- Total capacity: 200 GB
- Current usage: 44 GB
- Trying to enter into new submarine cable consortium SEA-ME-WE-5
- International Terrestrial Cable (ITC) operator are in operation to:
  - increase international connectivity
  - increase bandwidth availability
  - increase redundancy
  - reduce the risk of natural disaster
  - reduce dependence on other international cables
- Can export surplus/ additional amount of capacity to neighboring landlocked countries



# Satellite in Bangladesh

- Current usage through rental
  - Broadband: 120 MHz
  - Telecommunication: 385 MHz
- To ensure better communication services, Bangladesh felt the need of having its own communication satellite in the orbit. Its basic characteristics are as follows:
  - 40 transponders (16 x C band 24 x Ku band)
  - Coverage area: South Asia, South East Asia, Middle East, CIS (Commonwealth of Independent States)
- Potential service areas: DTH and video distribution, VSAT, backhaul, restoration, disaster preparation and relief, e-learning, telemedicine, etc.
- Objectives:
  - Provide backup to terrestrial network
  - reduce the risk of natural disaster
  - earn foreign currency through international sales
  - cut down the existing foreign currency expense incurred due to international satellite bandwidth consumption
  - minimize digital divide by providing various services including broadband up to rural areas



# Harnessing submarine and satellite

- More than 95% of international telecom traffic is carried by submarine cable systems (Bressie 2010). This reflects the advantages of fiber optic cable over satellite in terms of bandwidth and latency.
- Sometimes, submarine cable is not a viable option for some countries and operators. Landlocked countries, for example, do not have direct access to the sea and thus are constrained in their ability to exploit submarine technology fully.
- On the other hand, many small island developing states (SIDSs), mainly in the Pacific Ocean, are distant from undersea fiber routes, and the economics of connecting to undersea cable are problematic. These factors tend to encourage the use of satellite connectivity.
- However, even where countries have access to undersea cable, they still may want to deploy satellite as a backup to ensure redundancy.
- To minimize digital divide and provide broadband services up to rural areas, harnessing submarine and satellite system is important.