

C-BAND SATELLITE: ONE RESOURCE FOR MANY SECTORS

Mobile Backhaul



Backhaul for mobile networks in rural areas

2.9 billion people living in rural areas in Africa and Asia

In Indonesia between **6 - 15 million** mobile subscribers are served with the help of C-band, representing a total market value of up to **\$558 million**

Oil and Gas



6.9 billion barrels are extracted every year in tropical regions

Losing C-band connection for one day on a platform can cause losses of **\$15 million**

Reliable connectivity for **exploration, extraction and monitoring**

Maritime



50,000 merchant vessels delivering most of the world's products

Connectivity for trans-oceanic shipping and cruises

12,000 maritime C-band terminals are currently in use

Broadcasting



Broadcast distribution to terrestrial networks and more than a billion end-users

C-band protects TV audience of **140 million** users in Africa from service disruption due to rain fade

C-band helps distribute **372** TV channels across Africa

Banking



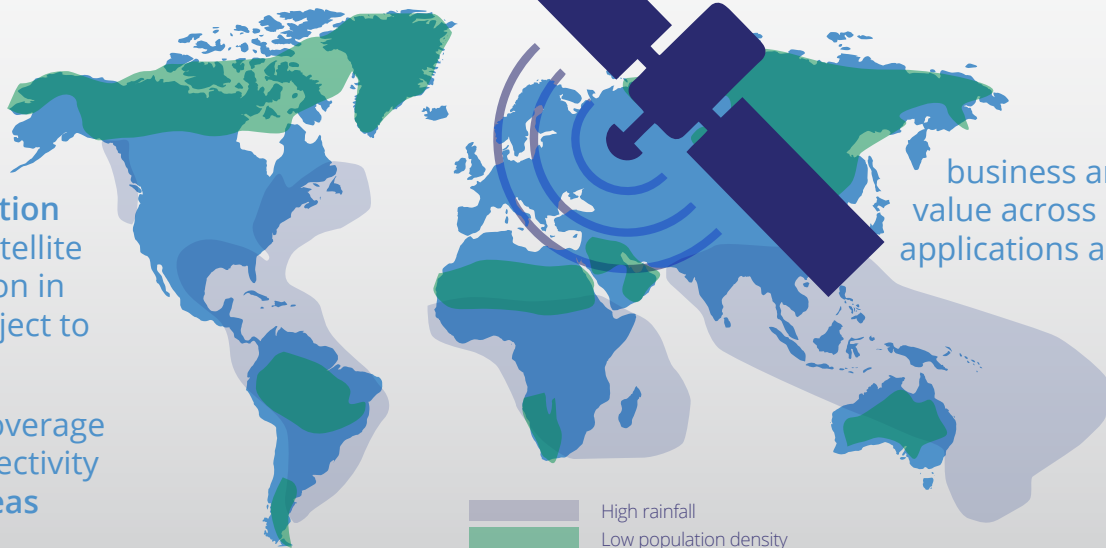
Connecting bank branches, **ATM networks**, and **trading platforms**

1.1 million ATMs in Asia Pacific serve **1.8 billion people**

75000 antennas use C-band to dispense **\$400 million** per day in Indonesia alone

The only solution for reliable satellite communication in countries subject to high rainfall

Worldwide coverage enables connectivity in remote areas



C-BAND business and social value across different applications and users

Meteorological



Distributes operationally and time critical **meteorological data**

C-band is central to the operation of **meteorological networks** in tropical and remote areas

Distribution of forecast data via C-band allows populations to prepare for **adverse weather** events

Health



Tele-medicine, connectivity for hospitals and medical centres

2.3 billion people in rural areas across Asia have limited access to adequate healthcare facilities

150,000 people treated every year in India alone with the support of C-band

Humanitarian



Connectivity for **field offices**, programme deployment, **disaster management** in remote and tropical areas

Humanitarian agencies target **70 million people** every year

C-band facilitates the delivery of **\$3.2 billion** of humanitarian aids to Sub-Saharan Africa

Government



E-government, connection for local and regional, specially in remote regions

E-government solutions facilitate efficient delivery of services to underserved areas across Asia and Africa

In Nigeria government network projects using C-band are estimated to generate cost savings of **\$70 million** per year

ASSESSING THE VALUE OF C-BAND

In order to assess the value of C-band, it's necessary to effectively capture the benefits it brings to different stakeholders, as well as the extent to which these benefits can be provided by other technologies. The following steps would be required to arrive at an assessment of C-band value:

1. Identify the market players:

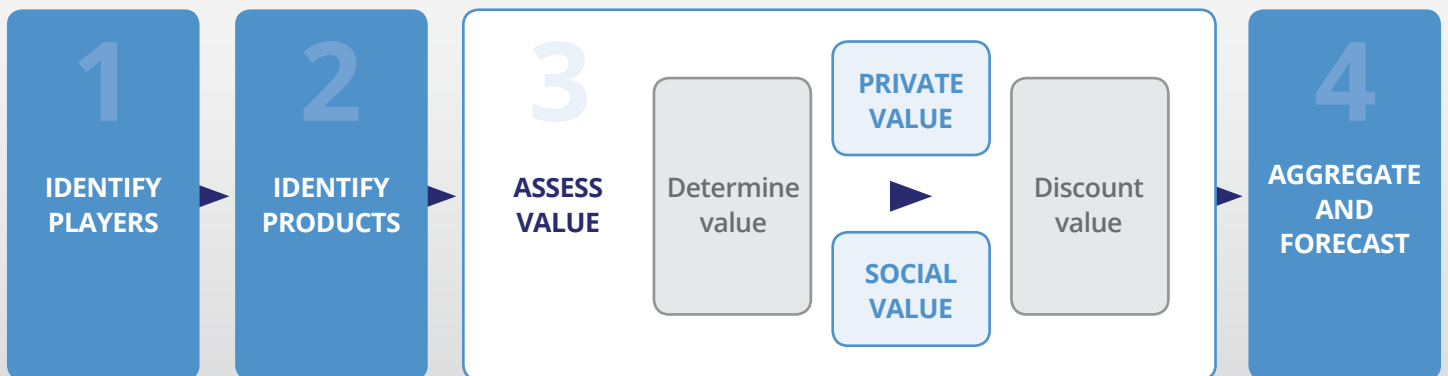
This first step aims to map the range of stakeholders involved in the C-band ecosystem, namely:

- ▶ Identify the service providers (e.g. satellite operators)
- ▶ Identify the users (e.g. firms, public authorities, international organisations, NGOs)
- ▶ Identify the sectors (e.g. oil & gas, financial, education) and regions in which these users and providers operate

2. Identify the products and services:

This step aims to understand the variety of products and services that use the C-band. Specifically it aims to:

- ▶ Identify the products and services offered by service providers (e.g. access to networks to VSAT equipment)
- ▶ Identify the activities of C-band users (e.g. tele-medicine, oil and gas extraction, financial trading platforms)



3. Assess value:

This is central to the valuation and involves the following sub-steps:

- ▶ Private value, including both the prices paid by users to service providers, as well as benefits derived by users from activities relying on C-band
- ▶ Social value, which includes broader benefits to society resulting from C-band-enabled activities (e.g. humanitarian aid, tax revenues from the oil and gas sector)
- ▶ Discount value, to determine the value which can be directly attributed to C-band: where an activity is only possible with C-band, the value of C-band to the particular user will be equal to the value generated by this activity. Where the C-band is needed only for an aspect of the activity (e.g. due to extra coverage or reliability) or can be substituted with a different technology, the value of the activity should be discounted.

4. Aggregation and forecast:

Finally, the value to different users and service providers would need to be aggregated and forecast. This can be done for specific sectors or geographies.