**MOD** ACP/22A7/5

QUESTION 5/1

**Best practices and guidelines for setting policies and regulations for providing telecommunication/ICT services in rural and remote areas**

# 1 Statement of the situation or problem

There is a strong gap in the levels of ICT access, ICT skills and telecommunication infrastructure between urban and rural communities. Provision of telecommunication/ICT services such as basic voice, short message, video-conference and internet services is not lucrative in sparsely populated rural areas of developing countries. So, development of telecommunications/ICTs in rural and remote areas of developing countries is slow unless effective government policy and initiatives are implemented.

Most of the time, existing network systems are primarily designed for urban areas, where the necessary support infrastructure (adequate power, building/shelter, accessibility, skilled manpower to operate, etc.) for setting up a telecommunication network is assumed to exist. Hence, current systems need to be more adequately adapted to specific rural requirements in order to be widely deployed.

Some of the known challenges that developing countries planning to extend ICTs to rural and isolated areas must be tackle are the following:

1) Shortage of power

2) Expense of maintaining power backup – usually diesel – and environmental hazards thereof

3) Difficult terrain

4) Difficult access and transportation

5) Lack of skilled manpower

6) Installation and maintenance of networks is quite challenging and difficult

7) Very high operating cost

8) Low potential ARPU

9) Sparsely populated areas and scattered population clusters.

In order to promote social and economic activities in rural and remote areas, more detailed studies addressing the challenges of deploying cost-effective and sustainable ICT infrastructure in rural and remote areas are expected to be undertaken within the ITU‑D study groups, taking into account the global perspective.

The General Assembly adopted the outcome document of the high-level meeting of the General Assembly on the overall review of the implementation of the outcomes of the World Summit on the Information Society (WSIS):

We further express concern that digital divides remain between developed and developing countries, and that many developing countries lack affordable access to ICTs. By 2015, only 34 per cent of households in developing countries have internet access, with significant variations by country, compared with more than 80 per cent in developed countries. This means that two-thirds of the population residing in developing countries remains offline.

There are UN Sustainable Development Goals (SDGs) concerning this Question, such as; Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation, and Goal 10: Reduce inequality within and among countries.

As the facilitator of WSIS Action Lines, ITU has played its role, contributing to attain the relevant SDGs through the matrix to WSIS Action Lines. The ITU 19th Plenipotentiary Conference (PP-14) resolved Resolution 200, which describes “Connect 2020 Agenda for Global Telecommunication/ICT Development”. The annex to the Resolution lists four goals and 17 targets. Among these targets, the followings are related to Telecommunications/ICTs for rural and remote areas.

– Target 1.1: Worldwide, 55 per cent of households should have access to the Internet by 2020.

– Target 2.1.A: In the developing world, 50 per cent of households should have access to the Internet by 2020.

– Target 2.1.B: In the least developed countries (LDCs), 15 per cent of households should have access to the Internet by 2020.

– Target 2.4: Worldwide, 90 per cent of the rural population should be covered by broadband services by 2020.

In order to implement the Connect 2020 Agenda successfully, ITU-D should continue the study of Telecommunications/ICTs for rural and remote areas.

# 2 Question or issue for study

There are still many challenges to spread Telecommunications/ICTs in rural and remote areas. Throughout the previous studies, it has been clear from the experience of many countries that technologies and strategies for rural and remote areas are various and diversified from country to country. Also, social, economic, and technological situation in rural and remote areas is changing rapidly. Therefore, it is important to update the study of telecommunications/ICTs for rural and remote areas and to provide the best practices to other developing countries. It is further proposed that the study should progress in stages, to cover a four-year cycle in the following manner:

– Step 1: Continue identification of the full range of potential techniques and sustainable solutions that can significantly impact on the provision of telecommunication/ICT applications in rural and remote areas, with emphasis on those that employ the latest broadband technologies designed to lower infrastructure capital and operating costs, assisting convergence between services and applications, taking into considerations reducing greenhouse gas emissions. Rapid change of technologies, such as LTE and new satellite communication technologies, which could be utilized in rural and remote areas, should be taken into account. Here, we need coordination and avoid duplication with Question 2/1.

– Step 2: Continue to investigate and report on how the techniques identified above can be used to best deliver the range of services and applications required by rural and remote communities and adapted to the needs of their users. Development of locally relevant content and services should be considered.

– Step 3: Identify, assess and consolidate the challenges faced by developing countries in setting up or upgrading telecommunication infrastructure in rural areas, including those aimed at providing enhanced broadband connectivity through networks based on suitable interoperable IMT frequency bands, such as 450-470 MHz and other frequency bands identified for IMT.

– Step 4: Report on the public policies and regulatory measures carried out by developing countries to overcome or mitigate the above-mentioned challenges in rural and remote areas. Here, we need coordination and avoid duplication with Question 1/1.

– Step 5: Describe the evolution of system requirements for rural network systems specifically addressing such identified challenges of rural deployment. Here, we need Liaison and avoid duplication with ITU-T SG5 Question 14/5“Setting up a low-cost sustainable telecommunication infrastructure for rural communications in developing countries”.

– Step 6: Continue consideration of the quality of the services provided, and the cost effectiveness, degree of suitability in different geographies and sustainability of the techniques and solutions identified in the above‑mentioned steps.

– Step 7: Augment the report on the set of case studies that clearly demonstrate how a range of techniques, based on new technology aimed at providing reduced capital and operating cost solutions, reducing GHG emissions and enhancing community participation, can maximize the benefits of broadband telecommunication/ICT infrastructure in rural and remote areas. Case studies should be analysed as case study analysis reports.

– Step 8: Identify business models for sustainable deployment of networks and services in rural and remote areas, taking into consideration priorities based on economic and social indicators.

During the study carried out in each of the steps, the following matters should also be studied and reflected in the outputs of the Question:

– environmental sustainability in deploying the infrastructure and necessary robustness of telecom infrastructure;

– maintenance and operational aspects to provide a quality and continuous service;

– demand-side factors and practices to generate and increase the usage of ICT devices and services;

– efforts to build ICT skill sets for the deployment of broadband services;

– relevant localization of content;

– affordability of services/devices for rural users to adopt so as to fulfil their development needs.

In dealing with the above studies, the work under way in response to other Questions being dealt with in ITU‑D, and close coordination with relevant activities under those Questions, in particular Questions 1/1, 2/1, 4/1 and Questions 2/2, 4/2 and 5/2, are highly relevant. In the same way, the studies shall take into account cases related to indigenous communities, isolated and poorly served areas, least developed countries (LDCs), small island developing states (SIDS) and landlocked developing countries (LLDCs), and highlight their particular needs and other particular situations which need to be considered in developing telecommunication/ICT facilities for these areas.

# 3 Expected output

The output will be a report on the results of the work conducted for each step above, together with a handbook, case study analysis reports, and one or more recommendations at appropriate times, either during the course of or at the conclusion of the cycle.

# 4 Timing

The output will be generated on a yearly basis. The output from the first year will be analysed and assessed in order to update the work plan for the next year, and so on.

# 5 Proposers/sponsors

The Question was originally approved by WTDC-94, and subsequently revised by WTDC-98, WTDC-02, WTDC-06, WTDC‑10 and WTDC‑14. Brazil, India and Japan.

# 6 Sources of input

Contributions are expected from Member States, Sector Members and Associates, as well as inputs from relevant BDT programmes, particularly those that have successfully implemented telecommunication/ICT projects in rural and remote areas. These contributions will enable those responsible for work on this Question to develop the most appropriate conclusions, recommendations and outputs. The intensive use of correspondence and online exchange of information and experiences is encouraged for additional sources of inputs.

# 7 Target audience

| Target audience | Developed countries | Developing countries[[1]](#footnote-2)1 |
| --- | --- | --- |
| Relevant policy-makers | Yes | Yes |
| Telecom regulators | Yes | Yes |
| Rural authorities | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Manufacturers, including software developers | Yes | Yes |
| Vendors | Yes | Yes |

a) Target audience

Depending on the nature of the output, upper- to middle‑level managers in operators and regulators in developing countries, including relevant rural authorities, are the predominant users of the output. The study outcomes will ensure adequate attention of vendors to focus on their development efforts to meet the needs of developing countries.

b) Proposed methods for implementation of the results

To be decided during the study period.

# 8 Proposed methods of handling the Question

Within Study Group 1.

# 9 Coordination

The ITU‑D study group dealing with this Question will need to coordinate with:

– Focal points of the relevant Questions in BDT

– Coordinators of relevant project and programme activities in BDT

– Regional and scientific organizations with mandates covering the subject matter of the Question

– Other relevant stakeholders (see Recommendation ITU-D 20).

As may become apparent within the life of this Question.

# 10 BDT programme link

WTDC Resolution 11 (Rev. Dubai, 2014), Resolution 37 (Rev. Dubai, 2014), Resolution 68 (Rev. Dubai, 2014) and Recommendation ITU-D 19.

Links to BDT programmes aimed at fostering the development of telecommunication/ICT networks as well as relevant applications and services, including bridging the standardization gap.

# 11 Other relevant information

As may become apparent within the life of this Question.

1. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-2)