ITU-MIC Forum on Wireless Broadband Networks
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Session 1:Policies and Initiatives for Achieving Diffusion of Wireless Broadband in rural and remote areas

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Donkey Caravan in Jomsom, Nepal, heading for upper Mustang District

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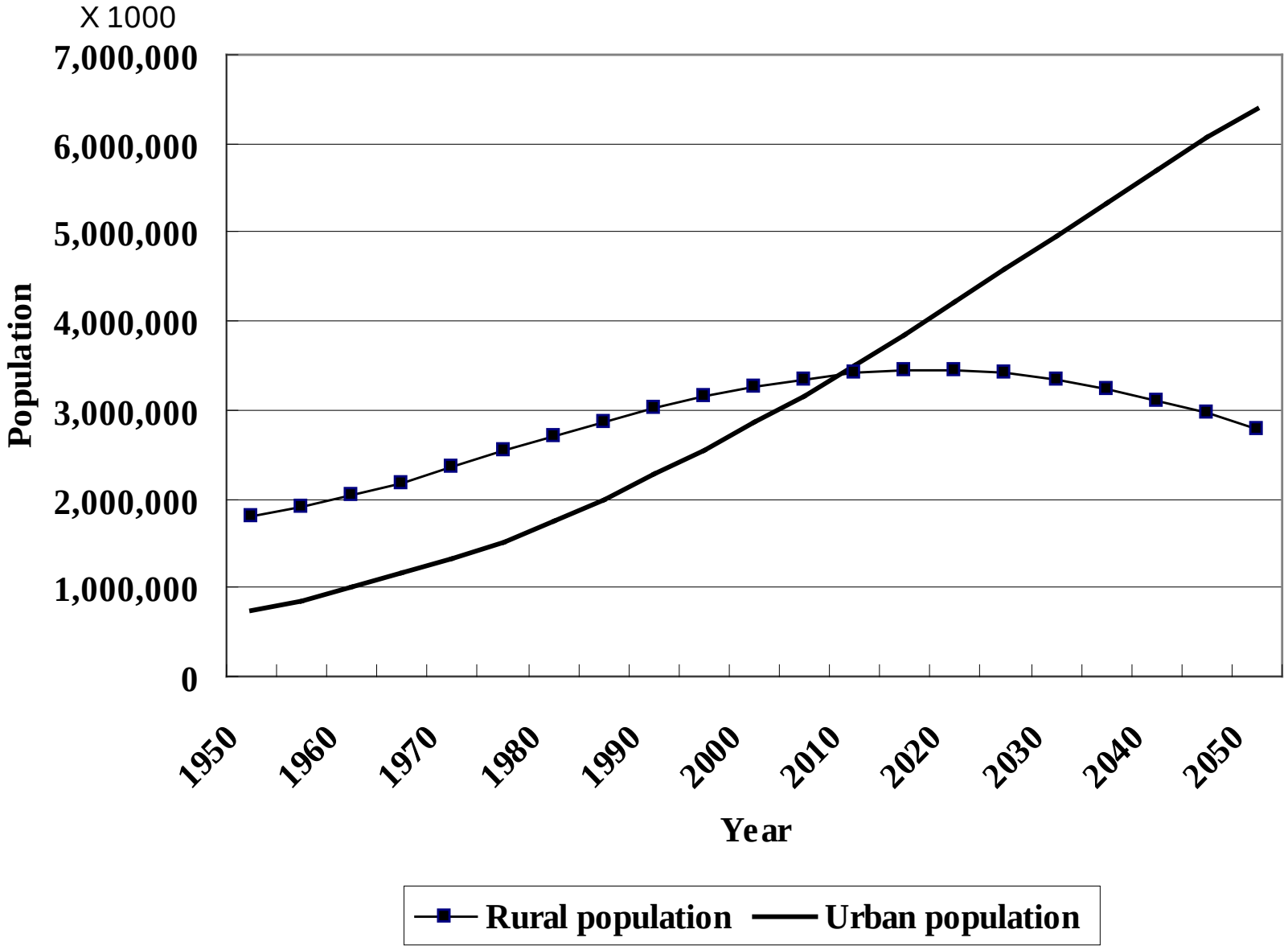
1. Challenge for bridging the divide since 1985

- Missing link report identified the communications gap between “haves” and “have nots” in 1985 recommended remedies
- WSIS 2003 (Geneva) and 2005 (Tunis) set the goal to provide equitable access to information and knowledge for all at affordable cost for bridging the “digital divide” by 2015
- ITU-D has been striving for the rural communications development since WTDC-98 (Valleta, Malta), i.e.; survey on rural areas, case study collection, analysis reports and recommendation ITU-D 19

2. ICT for alleviation of poverty in developing countries

- Reality of rural and remote areas of developing countries; lack of infrastructure, low population density, low economic activities, illiteracy, lack of ICT and information, difficult geographical, environmental and living conditions, etc.
- Rapid migration of population from rural to urban areas in developing countries causing poverty
- Amelioration of living condition and empowering rural and remote areas by ICT to remedy vicious circle
- Applicability of emerging ICT technologies and services

Figure 1: Global trend of Migration of Population from Rural to Urban Areas (Extracts from the 2007 revision population database, UN population division)



3. Infrastructure development for rural and remote areas by emerging technologies

- Infrastructure development for providing broadband connectivity for multimedia services
- Sharing infrastructure, bandwidth, facilities, CPE, etc at multi-purpose community tele-center(MCT) for cost saving
- Deployment of satellite, optic fiber, copper wire, **wireless**, **WiFi, WiMAX,** DSL and other emerging technologies
- Choice of appropriate technologies for the site is essential

4. ICT services and applications for basic humanitarian needs

- E-education
- E-Health/Telemedicine
- E-government
- E-post
- E-agriculture
- E-administration
- Internet Access service
- Community Discussion
- E-commerce
- E-business (remittance, credit card transaction, etc)
- Video and voice program streaming
- Others

5. Challenges of various Asia-Pacific countries (ITU-D case studies and contributions)

- **Cambodian case (Deploying WiMAX)**

  e-health, e-education, connecting schools, hospital, and health posts in rural areas
- **Indonesia (Satellite + Cable)**

  economic and social development of rural areas of Sumatera by multimedia services over NGN
- **Bangladesh (WiMAX, 3G, Fiber)**

  National development plan for rural communications
- **Nepal (Deploying WiFi)**

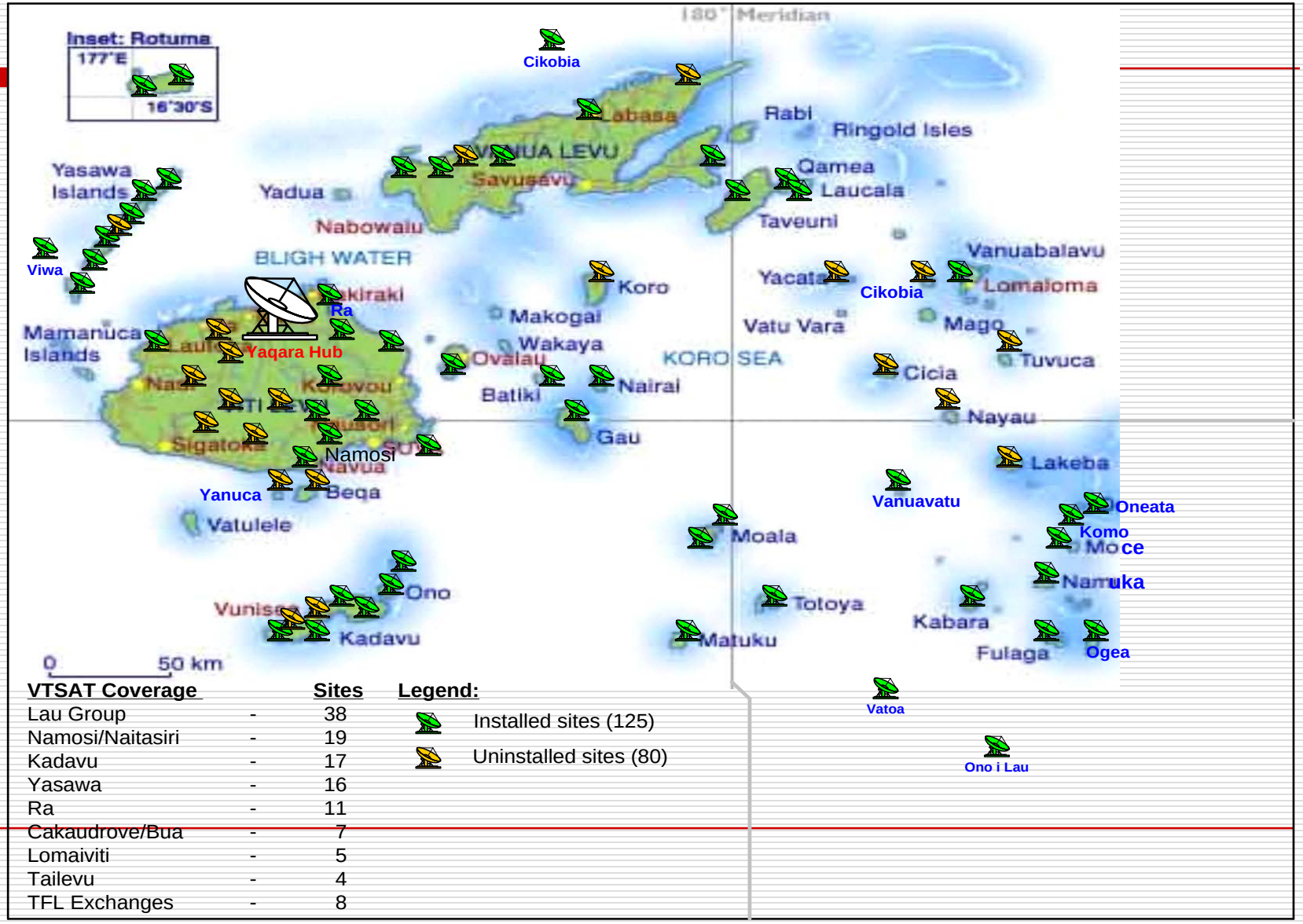
  Himalayan village ICT development project for the life of villagers by NGO
- **China**

  National development plan for rural and remote areas
- **Fiji (Satellite to connect the outer islands)**

Nepal Himalayan Broadband Wireless Network deploying WiMAX Connecting Jomsom and Pokhara, and interconnected with ISP

Communication infrastructure in Fiji

Extracted from the presentation at APT sub-regional meeting, Nandi, Jan 08



VTSAT Coverage		Sites
Lau Group	-	38
Namosi/Naitasiri	-	19
Kadavu	-	17
Yasawa	-	16
Ra	-	11
Cakaudrove/Bua	-	7
Lomaiviti	-	5
Tailevu	-	4
TFL Exchanges	-	8

Legend:

- Installed sites (125)
- Uninstalled sites (80)

6. Key issues for the networks in rural and remote areas

- Choice of technologies : considering the conditions of sites and areas of implementation
- Sustainability : the running cost for O&M, leasing facilities after building network should be compensated.
- Effectiveness : empowerment of rural community and enrichment of the quality of life
- Human capacity building : training community people for raising their awareness for ICT and training of trainers of various applications
- Funding for building networks (subsidies by various applicable schemes such ad USF, CSR, Freq. and Service Licensing Fee, PPP, Micro Finance, etc.)
- Energy supply is a basic bottleneck in rural and remote areas
- Supportive government policies to stimulate the demand for services over the networks (telemedicine, tele-education, e-administration etc.)

7. Conclusion (extracts from new Rec. ITU-D 19)

- Provision of telecommunications/ICTs in rural and remote areas should be included in their national development plans
- Assess all available technologies taking into consideration the regulatory environment, geographical conditions, climate, costs (Capex and Opex), maintainability, operability, sustainability, etc., based on the results of the site survey;
- Community Access Center approach to share ICT facilities and services
- Involvement of local government and institutions including village committees in planning and implementing ICT facilities
- Migration to broadband technology should be encouraged (to achieve minimum 256 dl/128ul connectivity)
- Partnership among governments, industry, local agencies and international organizations in the development of low cost ICT infrastructure, including renewable energy sources and terminals