Capacity Building Workshop on Information Society Statistics: Infrastructure, Household and other Indicators

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Jointly organized by ITU, UNESCAP, APT

FINAL REPORT

Introduction

1. The Joint ITU —UNESCAP-APT Regional Workshop on Information Society Statistics: Infrastructure, Household and other Indicators was held in Bangkok, Thailand between 6 to 8 November 2007. The welcome address was delivered by Dr. Eun-Ju Kim, Head, ITU Regional Office for Asia and the Pacific, Mr. Narayan, Secretary General of the Asia Pacific Community (APT), and Mr. Thampi, Head of the Information, Communication and Space Technology Division (ICSTD) of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). The meeting was officially opened by Mr. Tiewthanom, Deputy Permanent Secretary of Ministry of Information and Communication Technology (MICT), Thailand. All speakers highlighted the importance of measuring the Information Society and the need for timely statistics for policy-making purposes.

2. The workshop was attended by 105 participants from 24 countries representing national statistics office, regulatory agency and telecommunication ministry, and four international/intergovernmental organizations (See list of participants).

3. The workshop was divided in a number of sessions, where every session was moderated by selected participants (See workshop agenda).

4. The workshop aimed to inform member countries on the availability of Information and Communication Technology (ICT) data and their purpose, to discuss indicators currently

collected by ITU including their definitions, to examine the need for new indicators; the use of available ICT statistics in policy making and regulation; to discuss challenges related to information society measurements and to present possible solutions and identify technical assistance needs. The event allowed representatives of the national statistical system, as well as representatives of ministries and regulatory agencies who are producers and/or users of ICT statistics, to discuss the need for comparable data on information society developments, and share best practices in ICT measurement at the regional level. The presentations, country papers and other information about the workshop can be found on the Internet at:http://www.itu.int/ITU-D/ict/conferences/bangkok07/ and http://www.unescap.org/icstd/events/Info-Society-Stats-Workshop-2007/

5. The first session, moderated by the representative of Malaysia, focused on highlighting **global and regional experiences in ICT measurement**. ITU presented the *Partnership on Measuring ICT for Development* including its achievements as well current and future activities. The current activities include most of the work that the partnership is doing in the area of ICT data collection and capacity building. It further highlighted the different initiatives by different tasks groups covering capacity building, education indicators, government indicators and database developments. It further highlighted the Core ICT Indicators publication was adopted in 2005 containing definitions, methodologies and data collection issues related to household and business and ICT sector indicators. The presentation also highlighted the different workshops done by different partners in different regions. It further highlighted the workshop that was held in 2006 including the challenges related to information society measurements in the region.

6. The second presentation of ITU highlighted its current measurement work both in the area of telecommunication indicators and household statistics. It also highlighted the challenges faced by its Statistics division in collecting the data from national contacts related to these set of indicators. It further mentioned the online collection method, its many forms of data dissemination, and the workshops it conducts to raise awareness related to ICT indicators issues and to discuss the indicators it collects. It further alerted the participants to the upcoming global meeting on telecommunication indicators, the World Telecommunication Indicators (WTI) meeting, scheduled to take place in Geneva on 13-15 December 2007. The presentation further highlighted the themes to be discussed during the meeting that include community access indicators, new indicators to cover new technologies and services, and the ITU Single Index.

7. The representative from the United Nations Conference on Trade and Development (UNCTAD) presented its work in the area of ICT measurements in businesses. The presentation highlighted the challenges related to collecting internationally comparable data, the dissemination of data collected, the link between its work on ICT measurement, research and analysis and ICT policy, the technical capacity building work, Its methodological Manual and other areas it currently engage in terms of ICT business indicators.

8. ESCAP, presented their work on ICT Policy and Regulatory Framework Development and the upcoming ICT Policy database. The presentation emphasized the importance of ICT indicators as one set of tools for evidence-based policy making to produce better policy and implementations. The need for Regional Policy Harmonization was also emphasized.

Country presentations

a. The representative from Malaysia – The regulator presented the measurement work of the Malaysian Communications and Multimedia Commission (MCMC) mainly coming from its mandate as the regulator to measure its sector. Their work includes planning, data collection and dissemination. The Computer Assisted Telephone Interviews (CATI) center of MCMC collects data on ICT usage that is not collected by the national statistical office. They also collect data from operators to complement data collected from users of ICT. The presentation highlighted some major findings related to their latest surveys, including findings that there are high proportion of fixed lines in urban areas, Direct Exchange Line (DEL) trend is decreasing, mobile phone users increasing, payphones are getting fewer in rural areas due to vandalism., usage of ICTs by gender reveals that usage is higher by males, hand phone usage by age groups differs by age brackets, and that mobile subscription dropped from 2006 because of second subscription. It is further highlighted the *texting* is becoming a norm in Malaysia. Internet usage between rural and urban is also highlighted, showing great divide with users mainly coming from urban areas. It was also found that highest usage is in the older population, while usage by gender is more equal. Broadband is mainly through Digital Subscriber Line (DSL) connections while dial-up connection is still the main way of accessing Internet in the country. MCMC is planning to conduct the business data collection in 2008, while community access data collection is on-going. The presentation also highlighted that a three-month period is established by operators to distinguish between active users and in-active users for prepaid mobile. The participant from Malaysia emphasized the importance of measuring ICT adoption in the country and added that the National Statistics Office (NSO) plans to participate in the WTI meeting indicating their interest in collecting ICT data.

b. The representative of Singapore highlighted the measurement work related to telecom statistics. Singapore has a decentralized system of data collection where sector agencies are responsible for collecting the data covering its own sector. The Infocomm Development Authority(IDA) collects ICT data in the country. Data collected by IDA include administrative data mainly coming from licensed operators, as well as data collected from individual and business surveys on usage of ICTs. Some results were also presented related to the penetration of different ICTs in the country. The agency faces a number of challenges, including the assessment of whether data are relevant or not in describing the sector. To cope, they conduct a number of periodic reviews to assess the relevance of the data collected. Timeliness of the data is also one of the problems they face. To solve this they try to use standardized surveys to lessen the data collection time, and at the same time they exercise their role as regulator to collect the data. The problem of confidentiality of data is another main challenge they face. The presentation concluded that data collection is a resource-intensive process for both the industry and IDA.

c. The representative from Japan presented the data collection in the country, showing latest results of the ICT household survey. The Ministry of Information and Communication (MIC) conducts surveys on communication usage. The presentation highlighted the main challenges related to household surveys as well dissemination of results and usage of results by different agencies in the country. There are a number of surveys conducted by the ministry during the year, where the ICT usage survey is conducted once a year.

d. The representative from Bhutan presented the telecommunication development in the country highlighting some of the major developments in the sector, including the impressive growth of the mobile sector (mobile service started in 2003 and already overtook fixed line subscriptions this year). The presentation mentioned that NSO doesn't collect specific ICT data but some questions are included in household surveys and population censuses. The statistical system is decentralized where NSO is collecting only data that are common for all sectors. The Ministry in-charge of telecommunication collects basic ICT data using administrative sources mainly coming from telecom operators. The census collected some data on ownership of ICT. The presentation also highlighted some of the challenges the agency face in collecting ICT data that include lack of technical capacity in the NSO, shortage of staff due to a number of collections and demand for other statistics, and lack of resources to conduct the survey. Demand for ICT data are coming from national agencies as well as regional and international organizations. The presentation further highlighted that demand for data from various sectors is available but there is a need for close collaboration among different agencies in the country, including the regulator and ministry to design the survey and identify the data needed for policy-making.

e. The representative from India presented some of the country's macro statistics as well as the overview of the telecom market. Data on physical infrastructure (such as subscribers) are collected monthly while financial data are collected annually. The main challenge faced by the agency, Department of Telecommunications (DoT) includes unavailability of data due to large parameters that need data collection. The presentation also mentioned the meeting planned this month on ICT measurement that is aimed to study the need for newer data such as ICT, where the NSO will be responsible for collecting the data.

f. The representative from Mongolia presented some of the latest data as well as the ICT market and the different services that exist in the country. The presentation highlighted the operators in the country and some of the latest results. The license agreement helps them to get information from the operators. Sensitivity of the data is one of the problems they face in collecting ICT statistics. To ensure confidentiality, they aggregate the data before making them public. Timeliness of data related to financial statistics is also a problem.

g. The representative from the national statistics office (CSO) of Myanmar presented some latest statistics of the country. CSO collects data in collaboration with other agencies. CSO do not collect communication data but use the information from the ministry of posts and telecommunications.

h. The representative from Samoa highlighted some data in the country as well as challenges they are facing in the area of the data collection. The lack of demand from national policy makers is a main issue why ICT data are not widely available. To solve this, they highlighted the need to raise awareness on the usefulness of ICT statistics.

i. The representative from Nepal presented a paper on ICT situation in the country. The sector was opened in 1995 with the assistance of World Bank. Under IT Policy 2000, the National Technology Center was established as body under the Telecommunication Ministry. It duties include advising the ministry, hosting government web pages, etc.

j. The representative from Timor Leste started the presentation by giving some information about the country. ICT data collection is very new to them. There is a number of data

collection but none on ICT. The census in 2010 hopes to include some questions on ICT and needs statistical capacity building. ICT data collection is too early for them.

k. The representative from Lao PDR presented some of latest telecommunication statistics in the country and mentioned that latest data on telecom is available until mid-2006.

l. The representative from Bangladesh presented some of the available data for the country.. The presentation mentioned that ICT should be one of the first sectors that the government should focus on. GrameenPhone played a crucial role in the improvement of ICT access. Challenges for Bangladesh in improving ICT penetration include lack of awareness by politicians, lack of computer in education sector and at work, as well as other infrastructure.

ICT household statistics

9. The purpose of the session, moderated by UNCTAD, was to discuss topics related to the definitions, model questions and data collection of core ICT indicators on access to and use of ICTs by households and individuals and to learn from the experiences of countries/economies who have been involved in the collection and dissemination of ICT household statistics.

10. ITU presented the core indicators of the Partnership on Measuring ICT covering household and individuals. The presentation emphasized that the core indicators on access to and usage of ICTs by households and individuals should be used as a starting point of countries who are planning to data on the subject for the first time. The data collection of ICT household data that was conducted by ITU beginning of 2007 was further highlighted. The presentation mentioned the challenges encountered, including the lack of official surveys in countries to collect the ICT data and comparability issues of data collected.

11. Ms. S. Roberts, consultant of the ITU and of the Partnership on Measuring ICT for Development presented model questions for indicators on access to and use of ICTs by households and individuals. She further presented scope, frequency and other methodological issues related to ICT household data collection. Most of the participants were already aware of the core indicators. The representative from Sri Lanka (Ministry from Post and Telecommunication) mentioned that the household surveys are often done by companies for marketing research while the governments would collect data on regulatory issues. The representative from Bhutan inquired how the household indicators cover the access of individuals and how the ownership is reflected. Ms. S. Roberts responded that the usage of the computer of one member in the household would already be accounted as household access. Bhutan further requested information on what would be the best agency to collect household/ICT data. The panel (ITU, UNCTAD) responded that this would differ from country to country. Close cooperation among actors would be important. It does not necessarily have to be the NSOs, but they are usually the most experienced and have the statistical know-how. Bhutan responded that the NSO might be overloaded with work and that. ICT would be only one topic among many imposing their data collection. Instead the institutions demanding data would have to express its ownership and give additional funding or capacity to NSOs. He made the point very clear that the NSOs would not move, if there is no demand. Samoa explained that they were not aware of the ICT statistics and therefore a data collection is rather unlikely. ESCAP recalled that data collected by agencies other than the NSO are often not considered as official statistics

and may not be representative. Mongolia asked Ms. Roberts how household Internet access is defined. Access would include direct and indirect means of access.

12.   Ms. Ng from IDA Singapore shared her institutions' experience in data collection and dissemination. In Singapore the regulatory body conducts the surveys on the development in the ICT sector, the purpose is to have a better policy formulation, for setting targets and reviewing the development in the latest ICT Master Plan. The individual and household survey is conducted since 1990 where the NSO provides the basis for the sampling frame. The actual (face-to-face) interviews are outsourced to consultancies. Data analysis and interpretation are done by IDA. The data collection is a very resource intensive exercice. For Singapore, the ownership of computers is also important, because the Master Plan contains the target to have 100 % computer possession for households with school children. Singapore identified a narrowing gap between richer and poorer households. The Internet use indicators also cover the question, why individuals do not use the Internet. Data dissemination is internal for the ministry and other stakeholders. Summaries are published also to the broader public via the Internet website. One of the challenges Singapore face includes ensuring relevance of its surveys and mentioned that timely release of survey results are important to ensure its relevance. In addition, another challenge the agency face is the respondents' unwillingness to answer several surveys. IDA tries to keep the questionnaires as short as possible covering most important data. Additionally, awareness raising is important to motivate people to answer the survey. The representative from Samoa requested specific examples on how Singapore implements quality control on the data collected by the consultants. The representative from Singapore gave some examples quality control including several visits to the households and checking of the data collected by the consultants.

13.   The representative from the ESCAP Statistics Division presented a summary of their capacity building work that had ICT elements in them. The presentation highlighted that the Statistical Institute for Asia and the Pacific (SIAP) in Japan was responsible for practical statistical training at ESCAP. It included an overview of ICT indicators in its residential courses for statisticians. The Division had organized a series of subregional workshops together with PARIS21 on national strategies for development of statistics (NSDS), and was planning follow-up activities, including in the Pacific subregion. He confirmed that the NSDS approach was not sectoral by nature, and therefore the measurement of the information society was probably not receiving a special treatment in that process. The Division was also focusing on improving disability measurement, in which context it was noted that ICT had to be taken into account in the related survey questionnaires. The presentation also highlighted the importance metadata, or proper documentation of statistical data. The Division was implementing with the World Bank and PARIS21 a project aiming at improving access to microdata from censuses and household surveys, while maintaining the confidentiality of data. He mentioned that there is a Microdata Management Toolkit available for download from the International Household Network, http://surveynetwork.org/. Other capacity building activities included regional workshops in the preparation of the 2010 Census round. His presentation also gave an overview of the ICT-related topics recommended by the United Nations Statistical Commission for the censuses. He mentioned that while measuring access to ICT was a fairly new challenge for official statistics, the improvement of measuring the impact of ICT on people and the society was equally important. The Division was currently not collecting any ICT data directly from countries but was a user of internationally comparable indicators from the ITU, UNCTAD and MDG

databases. He regretted that recently the Statistics Division had not been able to contribute to the partnership as actively as in the early days because of staff changes and competing priorities.

14.   The Indonesian presentation highlighted some of the country's ICT Indicator. The representative mentioned that some ICT data are included in household survey conducted by the NSO. Other agencies such as the Agency for Assessment and Application of Technology (BPPT) and the regulator (POSTEL) collect some basic ICT data. He further highlighted the different initiatives related to index, and includes the Economist Intelligence unit, the DOI and the one conducted by WASEDA University that includes some basic telecom statistics. He added that measuring ICT access and usage is important since the government needs to regularly measure progress while national challenges on data collection is also faced, like in many other countries.

ICT business statistics

15.   The purpose of this session was to discuss topics related to ICT business statistics and the ICT sector, to present revisions of the core ICT business indicators and to propose new indicators, to discuss the measurement of ICT impact and to present available capacity building activities.

16.   UNCTAD presented the Partnership core ICT business indicators and the revisions they are proposing for certain indicators related to technologies and speed for broadband connection. Some modifications came from changes made by the Eurostat Working Group on Business Statistics while changes in the definition of technologies and broadband speed are from ITU. UNCTAD also proposed for the first time some new additions to the existing core list. These include indicators related to usage of mobile phones in businesses. The proposed new indicators are for discussion and comments by countries. The subsequent iscussion focused on the sub-categories of the indicators mentioned, and whether they are mutually exclusive or not. Questions related as to how to distinguish whether the businesses are receiving or placing orders using a mobile-fixed telephone were also asked, as well as clarifications concerning the two response categories related to e-government.

17.   Ms. Roberts presented the definitions and international classifications related to the ICT sector and trade in ICT goods. She further highlighted the work by OECD related to the classification of the ICT sector. She also presented the definition of business sector are those defined in ISIC10-74 under ISIC Rev3.1. The definition of ICT Sector based on the 2002 OECD definition was presented, which includes ICT manufacturing and services industries. The 2007 definition of the ICT sector is narrower in comparison to the 2002 definition. She further presented the classification based on ISIC 2007 and mentioned that the ICT goods classification is currently being revised while the ICT sector classification is available. She highlighted that since most countries are not using the revised classifications yet, the definition of the core ICT indicators will not change for the time being. She also listed some of the developments currently in place related to other economic classifications.

18.   UNCTAD complemented Ms. Sheridan's presentation by presenting some latest trends related to the ICT sector and trade in ICT goods. She showed that exports of ICT goods and services have grown strongly during the past decade, in particular from developing countries. ICT goods trade is increasingly becoming South-South trade or trade among developing

countries, while exports from developed countries are decreasing in relative terms. Among the top ten exporters of ICT goods, 7 are from the Asian region. Similarly, the share of developing countries in exports of computer and information services has increased significantly and is opening up new economic opportunities.. The presentation further highlighted the importance of surveying the ICT sector given its contribution to economic development, total ICT uptake, trade and investment, and others. A joing UNCTAD-Egypt project was also shown as an example of how to survey the ICT sector.

19.   The following session focused on measuring the impact of ICT. First, UNCTAD presented a general overview of the approaches towards measuring the economic impact of ICT and some of the key variables for measuring ICT impact on labour productivity at the firlm level.. The presentation highlighted results from impact studies carried out in several OECD countries on the impact of ICT on labour productivity (using firm-level data). Some data consideration include having information on business performance and economic variables in addition to the ICT data. UNCTAD then introduced a joint project with the NSO of Thailand, which aimed at measuring the impact of ICT on firm productivity using micro data. The project was part of UNCTAD's technical assistance in the area of ICT data analysis, whereby assistance was provided to the Thai NSO in carrying out the econometric analysis. The joint project started in January 2007 and will end in November 2007, while drafting of the report is currently in progress. The result will to be released in the UNCTAD Information Economy Report 2007/08 in January 2008.

20.   Second, the representative of the NSO Thailand presented the empirical results of the joint project with UNCTAD. She introduced the surveys that were done in 2003 and 2007 to review the ICT uptake at firm level and presented the empirical model that was used in the econometric analysis. Some results related to the distribution of firms in Thailand by economic activity, proportion of firms with ICTs such as computer, Internet and web presence The results of the joint UNCTAD-Thai NSO study show that computer use, Internet access and Web presence in manufacturing firms in Thailand are associated with significantly higher sales per employee (labor productivity). Lessons learned from the project and the study are related to the use of SPSS and the methodology in analyzing and interpreting econometric data. After the exercise, they feel that they gained skill in analysing micro firm data, in applying econometric techniques in data manipulation, and using Eviews software in running regression models. They further recommended that appropriate software should be learned from the beginning of the process and technical assistance from distance is suitable for such a project. Cambodia showed interest in the publication to learn on how they can replicate the same experience in the future. Some clarifications on how the data are computed were also requested. There was also a request from Malaysia for the methodology and other information related to the study that was done by UNCTAD and Thailand since they will start the ICT business data collection soon and are interested in the analysis of microdata.

21.   The final session focused on the UNCTAD capacity building activities. The new UNCTAD Manual for the Production of Statistics on the Information Economy was presented, which was released at the beginning of November 2007 and distributed to all NSOs via email. The main purpose of the Manual is to serve as a technical reference document for producers of official statistics on ICT in business. The Manual is subject to consultations with NSOs during 2008, before being submitted for approval to the UN Statistical Commission in 2009; therefore

comments are most welcome and should be sent to UNCTAD. UNCTAD also presented its new training course on ICT business statistics, for which the Manual serves as a basic reference material. The one-week training course will be delivered to participants in Asia-Pacific on 4-8 February 2008, in the Republic of Korea, jointly organized by UNCTAD, APCICT and UNSIAP and invitations will be sent out soon.

22.   The session on the *Importance and use of available ICT indicators in policy making and regulation* was moderated by ITU.

23.   ESCAP presented on new ICT indicators for Knowledge Economy. The presentation stressed the meaning of ICT for different sectors of economy and elaborated the value added through ICT which leads to future development. It highlighted that data collection should be based on ICT policy and regulatory decisions requirements to help stimulate investment. The presentation emphasized that particularly for the fast developing ICT nations in Asia a deeper understanding of ongoing processes and the capability to guide these developments are crucial.

24.   ITU Regional office representative presented some concepts of regulation and connected these questions to the decision making based on available ITU statistics. The presentation pointed out that the government should be an engaged actor in regulation and in stimulating growth. Even if the government is not a shareholder of an operator, it still would profit from growth in ICT through taxation. The presentation further stressed the need for data collection, not only to inform the international community, but in the interest of each single government in order to monitor license obligations. It used the interconnection charge and possible disputes as an example of needs for informed governmental decisions. Additionally, the presentation highlighted, taking up a point made by previous presentation, that "no decision" is also a decision in regulation, usually supporting the largest market player.

25.   After the two presentations the representative of Sri Lanka asked on how and where to get non-commercial data. UNESCAP and ITU informed the audiences on the publications available. Besides using ICT Eye, countries were invited to contact ITU STAT on further data needs. The representative from Vanuatu also requested whether ITU could assist in some regards of its changing fixed line licensing. Additionally, the question was discussed on how a country could attract further investment from abroad. Several other questions including problems related to controlling spectrum use and computation of telephone density were asked by the participants. ITU explained that in generally it would be up to the national regulator to supervise the quality of service (QoS) obligations. ITU further explained that telephone density is computed as a percentage of the population and not by land area.

26.   The session on **Information Society Measurement Initiative in the Asia-Pacific Region** was also moderated by ITU.

27.   APCTT, ESCAP presented on the role of ICT in enhancing technological capabilities. The presentation initially delineated the role that can be played by technology in influencing the competitiveness of a firm through its positive impact on the five determinants of customer value, namely, quality, speed, flexibility, convenience and cost. It then elaborated how the accelerated development of strategic, tactical, and supplementary technological capabilities through the use of ICT interventions can enhance technological capabilities and thus the determinants of

customer value. Concluding, the presentation described the challenges countries might face in implementing initiatives for improving their status with respect to introducing and utilizing ICT. It was highlighted that ICT introduction must not be seen as means of carrying out current activities faster but as a means of engaging in new competitiveness by enhancing activities previously not possible. Challenges that are likely to be faced in introducing ICT-based initiatives include obtaining visible and total commitment from the firm-level leadership, ensuring intra-firm and inter-firm adaptability in the supply chain, scalability, reliability, skill development within the firm, and establishing an inclusive culture. The presenter suggested the carrying out of comprehensive case studies of businesses that have already implemented ICT-based interventions for strengthening technological capability. This could provide valuable lessons to firms interested in embarking upon ICT-based interventions. Such studies should also explicitly incorporate indicator development to be able to understand how ICT interventions have influenced capability development, customer value creation, and overall competitiveness. To provide a comprehensive picture the indicators should include input, output, process, and impact indicators. Furthermore, it was emphasized that efforts should also be made to study how the adoption of ICT is influenced by the National innovation System of a country.

28.   Another presentation from ICSTD, ESCAP highlighted the relation of Connectivity and Development and some benchmarking tools, existing indices such as ICT-OI, DAI, and the Connectivity Index which was introduced in Volume 1 of the Asia-Pacific Journal of Information, Communication and Space Technology in 2006. An objective of the Connectivity Index is to show ICT usage in the country by taking Internet, fixed and mobile subscribers. The presentation emphasized that there is a trade-off between global coverage and more sophisticated data in formulating indices. It may be desirable to have some form of global index, to whatever sophistication is permitted while keeping global coverage. Indeed, using a prototype extension of the Human Development Index developed by the presenter, it was possible to assess the situation for all ESCAP members and associate members of the Pacific. The assessment notes relatively high rates of literacy and life expectancy compared to income for many economies in the Pacific, which suggests that improved ICT infrastructure and services for the Pacific could bring socio-economic benefits in terms of jobs and business opportunities for relatively educated and healthy, but often competitively economical, work-forces in many Pacific economies.

29.   The panel discussion on capacity building needs in the region was moderated by APT. The panelists are ITU, UNCTAD and ESCAP.

30.   ITU presented the challenges identified by participants either through country papers, presentations or during discussions. The challenges identified include:

- Lack of demand at national level (from policy-makers and analysts) for ICT usage data

- Lack of awareness related to the usefulness of ICT statistics

- Lack of coordination and cooperation among agencies working on ICT issues, (ministry, regulator and national statistics office)

- Lack of resources (financial, time and staff) to conduct the survey

- Lack of qualified staff to work on ICT statistics

- Lack of capacity related to ICT data collection

- Low response to data collection related to confidentiality issues

- Respondents are willing to participate in surveys when there is something in return

- Ensuring usefulness and timeliness of the data collected in monitoring and tracking ICT trends and developments

31.   Possible solutions were also suggested. These include assistance from regional and international organizations as well as coordination at the country level. It was suggested that country-level technical assistance/capacity building is needed in the area of collection and dissemination of ICT statistics, in order to achieve a targeted results. The participants further suggested that regional workshops are important in raising awareness among regulators and ministries who are users of ICT statistics.

Recommendations

32.   International organisation should:

- provide technical assistance such as country level training focusing on ICT data collection;

- should organize workshops to raise awareness of policy-makers on the importance of ICT statistics; and

- should provide funding from donors to help conduct the pilot survey

33.   At the country level

- Staff should be allocated to collect and manage ICT statistics;

- The Statistical Act should be reviewed and enforced to ensure collection of data from respondents;

- Public awareness programs related to the importance of ICT statistics should be conduced;

- Collaboration of different agencies should be ensured to encourage and improve data collection;

- ICT data collection should be included in the regular data collection of the National Statistical agencies (NSOs).