METHODOLOGY FOR MONITORING CORE ICT INDICATORS IN JAMAICA

Information and Communication Technology (ICT) refers to any communication device or application used in the processing and conveyance of information. The emergence of ICT as a potential facilitator of social and economic growth is accepted worldwide, and Jamaica is keenly aware of the need to monitor and evaluate the impact of existing ICT in order to assist in developing its social and economic plans.

In 2006, the Government of Jamaica mandated a comprehensive long-term National Development Plan which would enable the achievement of developed-country status by 2030. One of the committees set up to achieve this objective was the ICT Task Force with the vision to achieve ***"a globally competitive ICT sector that is widely accessible and makes the greatest possible contribution to the social and economic development of Jamaica"***.

STATIN's involvement with the achievement of Vision 2030's ICT objective is through the monitoring of twelve (12) core ICT Access and Use by Households and Individuals indicators, four (4) core indicators on ICT Infrastructure and two (2) core indicators on trade in ICT goods developed by the Partnership on Measuring ICT for Development. Jamaica has been making annual submissions of statistics on ICT access and use, by households and individuals to the International Telecommunication Union (ITU) since 2006 in fulfillment of membership obligations.

Core Indicators on Access to, and Use of, ICT by Households and Individuals

The twelve (12) core indicators and their designations are as follows:

HH1	Proportion of households with a radio
HH2	Proportion of households with a TV
HH3	Proportion of households with telephone
HH4	Proportion of households with a computer
HH5	Proportion of individuals who used a computer (from any location) in the last 12 months
HH6	Proportion of households with Internet access at home
HH7	Proportion of individuals who used the Internet (from any location) in the last 12 months
HH8	Location of individual use of the Internet in the last 12 months
HH9	Internet activities undertaken by individuals in the last 12 months (from any location)
HH10	Proportion of individuals with use of a mobile cellular telephone
HH11	Proportion of households with access to the Internet by type of access
HH12	Frequency of individual use of the Internet in the last 12 months (from any location)
HHR1	Proportion of households with electricity (Although not an ICT commodity, electricity is included as a reference indicator because it is an important prerequisite for using many ICTs.

Core Indicators on ICT Infrastructure and Access

The four (4) core indicators and their designations are as follows:

A1	Fixed telephone subscriptions per 100 inhabitants
A2	Mobile cellular telephone subscriptions per 100 inhabitants
A3a	Fixed broadband Internet subscriptions per 100 inhabitants
A3b	Fixed Internet subscriptions per 100 inhabitants

Core Indicators on Trade in ICT Goods

The two (2) core indicators and their designations are as follows:

ICT3 ICT goods imports as a percentage of total imports

ICT4 ICT goods exports as a percentage of total exports

Main Concepts and Definitions

The concepts, definitions and methodologies, used in the estimation of ICT statistics adhere to the general standards outlined in the Global Partnership for Measuring ICT for Development and the ITU Manual for Measuring ICT Access and Use by Households and Individuals (2009).

The two main concepts employed are household access to ICT equipment/services and individual use of ICT equipment/services. These are define as follow:

1. A household is considered to have access to ICT equipment or services, regardless of whether or not the equipment is owned by any member of the household, if:
   - the equipment is in working condition at the time of interview, or is expected to be returned to that condition soon,
   - the ICT service is in operation at the time of interview, or is expected to be returned to that condition soon,
   - the equipment or service is generally available for use by all members of the household at any time, regardless of whether it is actually used.

2. An individual's use of ICT equipment or service means that the device/service should be reasonably available through work, a friend or family member, etc., regardless of whether or not it is owned or paid for by the user. Additionally, activities for which the Internet is used refer to those activities undertaken for private purposes.

The following are the main definitions employed:

- A ***radio*** is a device capable of receiving broadcast radio signals, using popular frequencies, such as FM, AM, LW and SW. It includes a radio set integrated in a car or an alarm clock but excludes radios integrated with a mobile phone, a digital audio player (MP3 player) or in a computer.

- A ***television*** is stand-alone device capable of receiving broadcast telephone signals using popular access means such as over-the-air, cable and satellite. It excludes TV functionality integrated with another device such as a computer or a mobile phone.

- A ***fixed telephone line*** refers to a telephone line connecting a customer's terminal equipment (e.g. telephone set, facsimile machine) to the public switched telephone network (PSTN) and which has a dedicated port on a telephone exchange.

- A ***mobile cellular telephone*** refers to a portable telephone subscribing to a public mobile telephone service using cellular technology, which provides access to the PSTN. This includes analogue and digital cellular systems, as well as IMT-2000 (3G). Users of both post-paid subscriptions and pre-paid accounts are included.

- A ***computer*** refers to a desktop or a laptop computer. It does not include equipment with some embedded computing abilities such as mobile cellular phones, personal digital assistants (PDAs) or TV sets.

- The ***Internet*** is a world-wide public computer network. It provides access to a number of communication services including the World Wide Web and carries e-mail, news, entertainment and data files,

irrespective of the device used (not assumed to be only via a computer – it may also be by mobile phone, PDA, games machine, digital TV etc.). Access can be via a fixed or mobile network.

Sources of Data

Data used in the compilation of the core ICT indicators, were taken from the Jamaica Survey of Living Conditions (JSLC) 2012-2014, 2011 Population & Housing Census, Administrative Statistics Division at STATIN and the Office of Utilities Regulation (OUR). The JSLC is an annual multi-purpose survey, conducted by STATIN. Since 2010, an ICT module has been added to the JSLC questionnaire to collect information on individual use of ICT. Information on household access to ICT are gathered from other modules of the questionnaire.

Data Analysis

- The core indicators on access to and use of ICT by households and individuals are expressed as proportions of the in-scope households or population having access to, or using, ICT equipment and/or services with the exception of 3 indicators which are expressed as proportions of the total number of individuals who used the Internet:
    - location of Internet use,
    - Internet activities undertaken and
    - frequency of Internet use

  In the JSLC, in-scope households refer to private residential households while in-scope population refers to individuals 14 years or older who used ICT in the last 12 months preceding the date of the interview, 2012-2014. However, in the 2011 Population and Housing Census, the reference period for individual use of mobile cellular telephone was the last three months and the last six months for the use of computer and the Internet.

- ICT infrastructure and access indicators are calculated per 100 inhabitants of the mid-year population

- Indicators on the trade in ICT goods are calculated as proportions of total imports or exports.

The SurveyFreq procedure in SAS v9.1 was used to calculate design adjusted ICT estimates as well as the associated standard errors and coefficients of variation. To ensure reliability of the statistics reported for the indicators, only those estimates with coefficients of variation (CV) of at most 20 per cent are included.

Weighting

The JSLC has a multi-stage stratified random sample design; the method of analysis employed in compiling ICT estimates account for the complex design of the JSLC sample and appropriate weights were used, where necessary, to arrive at population estimates. Final weights were calculated as composites of the survey base weights, non-response adjustment and post stratification weights. The post stratification weight for individuals was calculated based on annual estimates of Jamaica's mid-year population by age and sex. For households, the post stratification weight was calculated based on housing estimates by parish and area (urban/rural).