



# Measuring Information and Communication Technology availability in villages and rural areas



**MEASURING INFORMATION  
AND COMMUNICATION TECHNOLOGY  
AVAILABILITY IN VILLAGES AND RURAL AREAS**

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## 1. Introduction

The first World Summit on the Information Society (WSIS) was held in Geneva, Switzerland in December 2003. It brought together leaders from governments around the world to discuss and adopt strategies for creating an inclusive Information Society. One outcome of the Summit was a Plan of Action enunciating ten targets to be achieved by 2015 of which the first is:

“...to connect villages with ICTs and establish community access points...”<sup>1</sup>

This report describes research to measure the target. It is based on questionnaires sent to developing country telecommunication administrations as well as review of relevant reports issued by government statistical and Information and Communication Technology (ICT) related agencies and other sources. The sources are identified in the “References” section.

It is noteworthy that the target goes beyond the traditional “teledensity” measure (i.e., telephones per 100 inhabitants) to incorporate the wider aspect of community access. Instead of measuring per capita access to ICTs, the target is oriented towards their availability in a locality where many could use them. This is more relevant for many developing nations where individual ownership of telephones, computers and Internet subscriptions is low.

The WSIS Plan of Action does not provide additional information regarding exactly how this target might be measured. This results in ambiguity about the target:

- There is no standard definition of *village*, especially for statistical purposes, although the word has rural connotations. For example, one definition of village is “a group of houses and other buildings, such as a church, a school and some shops, which is smaller than a town, usually in the countryside.”<sup>2</sup> This suggests that that the focus should be on rural connectivity.

- Village is rarely used as a unit of measurement. Most national statistical systems do not disseminate data at the locality level. Instead, data are expressed in overall quantities or in per population or per household ratios. If data are presented at the locality level, it is usually at the second administrative level of provinces.
- The term “ICTs” in the target is unspecified. This could incorporate broadcasting such as radios and televisions, telephones (both fixed and mobile) or computers and the Internet. Given that explicit ICTs are not specified, it is not clear whether emphasis should be given to one, several or all.
- There is no guidance on how many villages to connect. There is an inverse relation between the number of localities and population: most people in a country reside in a few localities. Therefore, monitoring a village indicator in isolation can be misleading.
- The term “Community access points” is also undefined in the Plan of Action although there has been subsequent research carried out in this area.

In order to measure the WSIS target, the number of villages must be determined. As noted, village implies rural but there is a wide range of what size a locality should be to be considered rural or called a village. There is no international standard about what constitutes a village. Some countries report the number of localities broken down by population size. However this is not widely available, and even if it were, does not solve the problem of what locality size should constitute a village. It would be logical to associate a village with a population size considered to be rural but definitions vary widely. Not only is there not a standard population size to be considered a village, but in many instances, other factors are considered such as administrative divisions or employment outside agriculture (Table 1-1). Another

**Table 1-1: Differing concepts of rural**

Criteria	Note	Number of countries
Administrative	Boundaries of state or provincial capitals, municipalities or other local jurisdictions	83
Population size	Concentrations ranging from 200 to 50'000 inhabitants	57
Economic	Proportion of the labor force employed in non-agricultural activities	25
Infrastructure	Presence of paved streets, water supply systems, sewerage systems, or electric lighting	18
No rural	Entire population is considered urban	6
No definition		25

Source: Adapted from Markandey Rai. “Operational Definitions of Urban, Rural and Urban Agglomeration for Monitoring Human Settlements.”

**Table 1-2: Distribution of localities in Jordan**

Size of locality by population	Localities	Population	% of localities	% of population
>100'000	10	1'875'060	1%	37%
10'000-99'000	63	1'889'943	6%	37%
5'000-9'999	68	442'408	7%	9%
2'000-4'999	150	487'655	15%	10%
500-1'999	316	325'662	31%	6%
<500	420	82'911	41%	2%
<b>Total</b>	<b>1'027</b>	<b>5'103'639</b>	<b>100%</b>	<b>100%</b>

Source: Adapted from Jordan Population & Housing Census 2004.

concept of rural is population density; in the European Union, rural is not defined by the size of localities but by the number of inhabitants per square kilometer.

The WSIS village target can be difficult to completely accomplish considering the demographics of localities. There is an inverse relationship between the number of villages and population typified by data from Jordan, where 29 percent of localities account for 92 percent of the population and 41 percent of small localities only account for two percent of the population (Table 1-2).

Another challenge is that the lowest level of *administrative division* in some countries tends to be several levels before villages. This is often the case where there is no local government or administration beyond a certain level. For example in Malawi, statistical data stop at the fourth level, a step above villages and there are no official data on the

number of localities smaller than the 250 "Traditional Authorities" (Figure 1-1).

Countries use a variety of local terms to refer to administrative divisions so often it is not clear what term corresponds to village. The European Union has harmonized this by mapping national administrative units to a five level hierarchy (Table 1-3).<sup>3</sup> However, even this classification stops before the locality level for some countries.

Apart from the methodological issue of what constitutes a village, not all countries publish how many localities they have. In addition, factors such as migration, nomadic populations, civil war, resettlement, etc. also impact the ability to precisely determine how many localities there are in a country. Given these constraints, a number of techniques and sources have been used to estimate the number of localities in a country in the absence of official data:

**Figure 1-1: Administrative Divisions in Malawi**

Nation

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