



**POLICY STATEMENT**

# ICT, POLICY AND SUSTAINABLE ECONOMIC DEVELOPMENT

Prepared by the ICC Commission on the Digital Economy



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## I. INTRODUCTION

The United Nations Sustainable Development Goals (SDGs) call for several advances by the year 2030.<sup>1</sup> Although access to and deployment of information communication technology (ICT) are cited as specific targets in only four of the SDGs (4, 5, 9 and 17), ICT plays a role in the realization of all of the SDGs.<sup>2</sup>

This policy statement will illustrate how ICT is equipping populations with tools to relieve poverty<sup>3</sup>, access education, provide healthcare and reduce CO2 emissions.<sup>4</sup> To sustain opportunities in the long run and ensure efforts are impactful across geographies and cultures, the statement explains how the ICT ecosystem works and the contributions business and other relevant stakeholders bring to policy-making efforts.

The diagram below presents an overview of the components needed to leverage ICT for sustainable economic development and their inter-relationship. This diagram will be used throughout this policy



1 <https://sustainabledevelopment.un.org/post2015/transformingourworld>

2 <https://www.ericsson.com/res/docs/2015/ict-and-sdg-interim-report.pdf>

3 <https://www.cisco.com/c/en/us/about/csr/community/partners/living-goods-partner.html>

4 [http://www.wwf.se/source.php/1183710/identifying\\_the\\_1st\\_billion\\_tonnes\\_ict.pdf](http://www.wwf.se/source.php/1183710/identifying_the_1st_billion_tonnes_ict.pdf)

statement to underscore the ways in which policy choices within and across each of these components can impact the potential of ICT to be leveraged for societal benefit.

- > At the centre, the infrastructure, applications and services, and user engagement layers make up the **ICT ecosystem**. These highlight the foundational role of ICT and how the different ICT functions are built on top of each other to deliver value to users.
- > The multi-coloured ring represents the different **policy issues (economic, technical, social/cultural, governance)** that arise through the use and development of ICT. These policy issues can be overlapping and need the experience and expertise of relevant stakeholders: business, civil society, technical community and government to be addressed effectively.
- > The ring around the policy issues represents the stakeholder groups that should collaborate to address evolving policy issues at hand.
- > The outer layer represents sustainable economic development opportunity, and as the diagram suggests, this is dependent on the intrinsic layers: involvement of all relevant stakeholders in policy-making and an interoperable, open, seamless and secure ICT ecosystem where the user engagement, application and services, and infrastructure lie at the core.

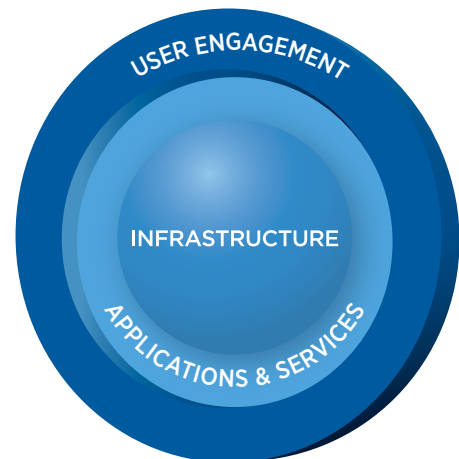
To provide further context on each of the layers and how the components work together, the following sections will present each component in greater detail alongside examples drawn from specific SDGs. In the final section, the ecosystem will be revisited in full to present how ICT can be leveraged.

## II. THE ICT ECOSYSTEM AS A FOUNDATION FOR SUSTAINABLE ECONOMIC DEVELOPMENT

As this section will explain, an interoperable, seamless ICT ecosystem is crucial to help populations reap the benefits of ICT and further development opportunity. For example, SDG 1 “end poverty in all its forms everywhere”, calls for all men and women, in particular the poor and the vulnerable to have equal rights to economic resources, as well as access to basic services, appropriate new technology and financial services, including microfinance by 2030.<sup>5</sup> With the widespread availability and use of mobile phones, many now have the opportunity to reach this goal.<sup>6</sup>

A mobile phone based platform for money transfer and financial services is able to give marginalised and remote communities access to a range of services, including money deposit and withdrawal, remittance delivery, bill payment, microcredit provision, which may be the foundation to the creation of local businesses. Money can be transferred via a menu on a phone and sent from one place to another more quickly, safely and easily than taking cash in person.

This is particularly useful in countries where many workers in cities send money back home to their families in rural communities.<sup>7</sup>



5 Target 1.4 <https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals>

6 <http://www.economist.com/blogs/economist-explains/2013/05/economist-explains-18>

7 <http://www.economist.com/blogs/economist-explains/2013/05/economist-explains-18>

To help understand how such an initiative is supported by a strong ICT ecosystem, the following layers should be considered:

Central to this example is an **infrastructure** that is accessible and affordable for all. In this case, people need to be able to afford a mobile phone, to have access to a mobile network, to afford the network access fees as well as the utilities to charge the phone.

Built on top of the infrastructure are the appropriate **applications and services**, which in this case is a financial application that can be used on the mobile. Depending on the financial application, it may be necessary to access other services in the cloud<sup>8</sup> to communicate with a financial or other institution for money deposit and transfer.

A key part of this example is the ability for the user to actively and independently use the device and understand the application's features. This can be done by reading or calculating information transmitted. User digital skills and literacy are therefore important and the ICT ecosystem as described underscores the need for developing both supply and demand side of connectivity issues. **User engagement** is crucial for the infrastructure and application to be meaningfully applied.

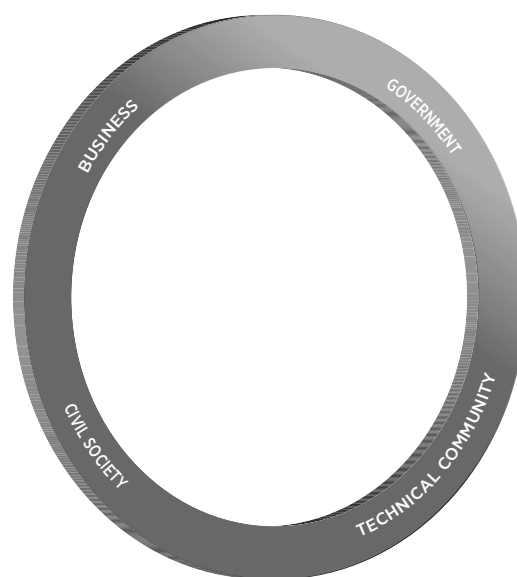
These mutually reinforcing layers as articulated in the diagram are important for basic functioning and the ability of the user to reap the potential benefits of the ICT application.

### III. MULTISTAKEHOLDER APPROACHES FOR WELL-INFORMED AND PURPOSEFUL POLICY-MAKING

By encouraging the participation of all relevant stakeholders in policy-making processes, governments can generate policies that are timely, scalable, and innovation enabling.

As this paper will illustrate, stakeholders play key roles in ensuring well-informed and targeted policy approaches. For example, SDG 5 “achieve gender equality and empower all women and girls”, calls for enhanced use of enabling technology, in particular ICT, to promote the empowerment of women.<sup>9</sup> Women make up more than 50% of the world's population, but represent a staggering 70% of the world's poor<sup>10</sup>. At the same time, when a woman receives US \$1, she invests around 80% of this amount in her family. Advancing women's equality can add US\$12 trillion to annual 2025 GDP and if women play an identical role in labour markets to men, US\$28 trillion could be added to global annual GDP by 2025.<sup>11</sup>

Access to ICT can impact gender equality by allowing women to participate more easily in the labour market. ICT can provide women with tools to feel more secure alone, access education and financial means or basic healthcare information.<sup>12</sup>



8 <https://cdn.iccwbo.org/content/uploads/sites/3/2016/10/ICC-Policy-Primer-on-the-Internet-of-Everything.pdf>

9 Target 5.b <https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals>

10 <https://www.globalcitizen.org/en/content/introduction-to-the-challenges-of-achieving-gender/>

11 <http://www.mckinsey.com/global-themes/employment-and-growth/how-advancing-womens-equality-can-add-12-trillion-to-global-growth>

12 <https://www.w4.org/en/icts-and-mobile-technologies-empowering-women/>

However, these benefits are dependent on women having meaningful access to ICT, which can be facilitated or prevented by affordability, relevant content, skills and security to name a few examples. Women are currently less likely than men to use or own digital technologies and gaps are larger among youth and those over 45 years old.<sup>13</sup> For countries to enhance the use of enabling technology for women they need to be well-informed about the barriers to access and how these challenges can be overcome.

The private sector plays a pivotal role in deploying Internet related infrastructure and delivering a wide range of ICT services. Business also contributes to encouraging access through capacity-building and education initiatives, promoting innovation, public-private research and development partnerships, where businesses work with other stakeholders.

Business is investing in extensive community oriented training to enhance women's use of enabling technology. By partnering with local nonprofits, programmes equip women with digital devices and provide training so that they can teach their neighbours and women in nearby villages on how to find relevant content, and how to make the most of these tools. Private sector initiatives are also reinforcing the importance of partnerships and inclusive approaches as many programmes encourage an entire lifetime attitude to training and awareness raising for women of all ages.<sup>14</sup> Business often collaborates with local communities, governments, as well as global organizations and has considerable knowledge and expertise in addressing gender access.<sup>15</sup>

Civil society and the technical community are also important to consult to ensure well-informed policy approaches. For example, civil society can advise on societal and cultural factors within social groups that may impact women's access and use of ICT. Groups are able to collect data and raise awareness on issues that create barriers for women.<sup>16</sup>

The technical community lends its expertise by advising on technical capabilities of infrastructure and technology. This expertise is invaluable in considering how these can be used or how technological innovation might mitigate the socio-economic and political issues identified. For example, the technical community can work to gather data on gender gap and develop insights that can help drive evidence-based policy-making to overcome challenges.<sup>17</sup>

A good example of how and where stakeholders can collaborate and share knowledge on a global scale is through the Internet Governance Forum (IGF). The IGF provides a unique opportunity because it is set up where stakeholders meet on an equal footing and share best practices and policy options on a range of subjects pertaining to the Internet. An IGF main session about sustainable development, Internet and inclusive growth gathered participants from developing countries, business, technical community and civil society to provide an overview of how to make the Internet meaningful and empowering for disadvantaged groups such as women.<sup>18</sup> An IGF workshop on an Internet of Women by 2020 provided useful considerations for policy options to address barriers women face to being empowered through ICT.<sup>19</sup> The IGF provides an opportunity for those policymakers who wish to benefit from diverse sources of knowledge, generate policy options from the experience and expertise of relevant stakeholders, which can then be translated into local action. The IGF provides capacity-building and information sharing on a range of ICT policy issues including connectivity, data protection, and emerging technology.<sup>20</sup>

13 <http://www.vitainternational.media/en/article/2016/01/20/digital-divide-is-it-really-crucial-to-narrow-the-gap-between-rich-and/165/>

14 <https://www.microsoft.com/en-us/DigitalLiteracy/casestudies.aspx>

15 <https://www.telefonica.com/en/web/public-policy/blog/article/-/blogs/ict-and-social-innovation-the-m-inclusion-project>

16 <https://iccwbo.org/media-wall/news-speeches/tackling-gender-divides-requires-everyone-table-igf-hears/>

17 <https://www.internetsociety.org/tag/women-and-ict/>

18 <http://www.intgovforum.org/multilingual/content/igf-2016-day-2-main-hall-sustainable-development-internet-and-inclusive-growth>

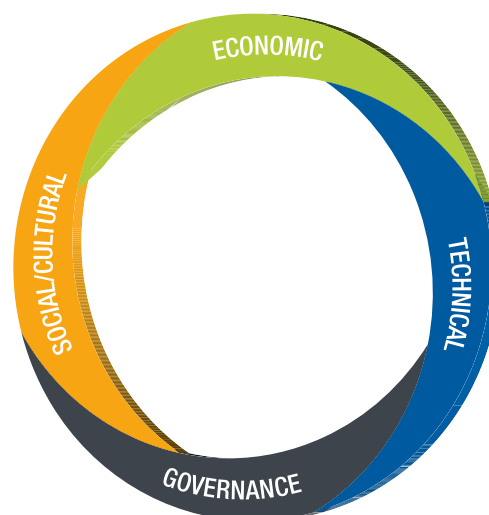
19 <http://www.intgovforum.org/multilingual/content/igf-2017-ws-37-tackling-gender-divides-ict-and-women%E2%80%99s-economic-empowerment>

20 <https://www.intgovforum.org/multilingual/content/thematic-work>

## IV. EFFECTIVE POLICY APPROACHES TO SUPPORT AN ENABLING POLICY ENVIRONMENT

With all relevant stakeholders consulted, governments will be better equipped to ensure an enabling policy environment. The policy considerations surrounding ICT can take the form of economic, social/cultural, technical and governance issues that are interlinked and cross-cutting.

The recommendations below provide examples of the types of policies that can help support an enabling environment for ICT.



### Economic policy considerations

#### Investment

In the last two decades, the private sector has played an important role in deploying Internet related infrastructure and delivering a wide range of ICT services. Going forward, private sector investment in infrastructure deployment in access, connectivity and innovation will need to increase even more rapidly. Ensuring public policies that promote rather than deter investment in next generation broadband technologies to enable new bandwidth intensive and quality sensitive applications and services is important. Similarly, investment in high speed networks and ICT services can create a platform for economic growth, job creation, and greater competitiveness. To seize the opportunities presented by the increased use of ICT and the Internet, policymakers should promote market entry and investments, and aim at attaining greater geographic coverage of networks.

#### Data protection

Governments should adopt policies to build trust by ensuring that users have practical mechanisms and appropriate control over how personal data is used. Companies should adopt recognised and applicable best practices to ensure that personal data is appropriately secured as technology and services evolve. Governments should recognize that an accountability approach that drives self-regulation efforts may be both a more flexible and effective method of achieving data protection than government regulation. The most productive approach to ensuring robust privacy and security standards is voluntary compliance with broadly accepted industry guidelines.<sup>21</sup>

#### Cross border data flows

Governments should ensure all citizens and companies can realize the full potential of the Internet as a platform for innovation and economic growth, by adopting policies that facilitate the adoption of new technologies and the global movement of data that supports them. Establishing clear rules and enforcing roles and responsibilities in the data processing value chain are the keys to maintaining responsibility over compliance irrespective of locality. Certain compelling public policy issues, including privacy and security, are recognized as possible exceptions and may form a legitimate basis for governments to place some limits on data flows if they are implemented in a manner that is nondiscriminatory, is not arbitrary, is least trade restrictive, and not otherwise a disguised restriction on trade.<sup>22</sup>

### Social/cultural policy considerations

#### ICT skills

For populations to be able to use ICT in a meaningful way, governments should encourage the development of literacy skills and training in ICT and related subjects to harness the local development opportunities ICT brings.

<sup>21</sup> [ICC policy primer on Internet of everything \(2016\)](#)

<sup>22</sup> [ICC policy statement on Trade in the Digital Economy: A primer on cross border data flows \(2016\)](#)

### Access for disadvantaged groups

Particular attention should be given to developing tools and products and services that promote access for the elderly and those with disabilities. Protecting women's rights to freedom from discrimination and exclusion and supporting their rights to political, economic, cultural and social participation is also important.

### Locally relevant content, resources and tools

Policies are necessary to continue the support of capacity-building initiatives that seek to empower individuals and businesses locally to become content producers and develop business models that are unique and relevant to national economies. Policies that promote the creation of locally relevant content should be encouraged. Such policies should be market-driven and based on voluntary commercial arrangements.

## Technical policy considerations

### Infrastructure

While framing ICT policies, governments must take into consideration that according to the International Telecommunications Union, 58.1% of people in Asia and the Pacific region, 58.4% in Arab States and 75% in Africa are yet to connect to the Internet. In contrast, 79% of Europeans have access to Internet.<sup>23</sup> Internet penetration rates are higher for men than women universally across all continents. To ensure the full potential of ICT investment in broadband infrastructure, access technologies, wireless devices and other related aspects of the ICT ecosystem still need to be incentivised.

### Spectrum allocation

Availability of spectrum, for shared and exclusive, licensed and unlicensed use, has a critical role in promoting the accessibility of the Internet and thus its developmental prospects. There are considerable economic benefits of taking action to ensure that sufficient spectrum is available to support the increasing demands following current and expected data traffic trends. There are many important uses of spectrum, including broadcast and mobile broadband as well as for Wi-Fi. Effective and technologically neutral management of this increasingly scarce resource must be a priority for policymakers while ensuring the integrity of services offered by existing spectrum license holders.<sup>24</sup>

## Governance policy considerations

### Interoperability

Lack of interoperability across the policy and regulatory environment can create needless administrative burdens and compliance inconsistencies across jurisdictions, stifling the opportunities and progress that can be made. The adoption of existing principles such as the principles set forth in the Organisation for Economic Cooperation and Development (OECD) Privacy Guidelines<sup>25</sup>, and Asia Pacific Economic Cooperation (APEC) Privacy Framework Principles<sup>26</sup> ensure adequate data protection and consistent approaches between countries. The APEC Digital Prosperity Checklist<sup>27</sup> is a useful tool to develop principle based and outcome driven policies.

### Public-private partnerships

Public-private partnerships are important to leverage existing industry standards and investments.

<sup>23</sup> <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2016.pdf>

<sup>24</sup> [ICC Discussion paper on Approaching shortages of mobile broadband spectrum threaten to limit broadband deployment and economic growth \(2011\)](#)

<sup>25</sup> <https://www.oecd.org/sti/ieconomy/privacy-guidelines.htm>

<sup>26</sup> [www.apec.org/Groups/Committee-on-Trade-and-Investment/-/media/Files/Groups/ECSG/05\\_ecsg\\_privacyframewk.ashx](http://www.apec.org/Groups/Committee-on-Trade-and-Investment/-/media/Files/Groups/ECSG/05_ecsg_privacyframewk.ashx)

<sup>27</sup> [http://www.apec.org/-/media/Files/Groups/TEL/APEC\\_Digital\\_Prosperty\\_Checklist.doc](http://www.apec.org/-/media/Files/Groups/TEL/APEC_Digital_Prosperty_Checklist.doc)



This will help utilize both public and private resources to facilitate the research, leadership, and governance to advance the use of ICT for sustainable development.

**Institutional capacity and cooperation**

Capacity-building remains critical to ensuring that institutions throughout the world are better able to collaborate to address developmental issues and share information. Greater efforts could be made through appropriate regional and global entities, such as the IGF, to help gather knowledge for capacity-building.

**V. LEVERAGING ICT TO MEET THE SDGS**

This policy statement has outlined the components required to leverage ICT for sustainable economic development: a foundational ICT ecosystem, the consultation of relevant stakeholders and examples of the types of economic, technical, social/cultural and governance policies that can help create an enabling environment for ICT.

The examples below are offered to provide a picture of where ICT serves to facilitate the advancement of the SDGs.



## SDG 6 CLEAN WATER AND SANITATION



ICT is revolutionizing the management of water resources, and its integration in water and sanitation projects offer many opportunities for SDG 6 “Ensure availability and sustainable management of water and sanitation for all”. For example, smart water meters can provide individuals with information about their water usage, especially during times of drought or flooding; real-time monitoring of communities reveals sanitation status; and satellite remote sensing of groundwater allows researchers to accurately gauge water quality.<sup>28</sup> ICT can make data transfer more efficient, thereby reducing the cost and duration of monitoring and inventory activities.<sup>29</sup> E-payment systems offer payment facilitation, increasing billing reliability and reducing administration and payment transaction costs. Digital technology can reduce maintenance costs and travel distance to access clean water, optimizing operations and improving quality of service. ICT also ensures better service to the poor and creates a system of transparency and accountability for water management.<sup>30</sup>

Since water is an increasingly scarce resource, efforts to limit, treat and recycle waste water will be key to sustainable management. ICT could prove effective in the treatment and recycling of waste water. For example, by installing gauging devices equipped with sensors, municipalities are better able to manage their sewer systems and receive reliable information to monitor them using a web platform, and send alerts via short message service (SMS) message when the level reaches high/low limits.<sup>31</sup> Likewise, the use of mobile sensors and data analytics can help rural villages improve the safety and security of their water supply.<sup>32</sup>

## SDG 7 AFFORDABLE AND CLEAN ENERGY



ICT enables infrastructure expansion and technological upgrades for supplying sustainable energy. By facilitating platforms for the provision of an energy service, such as smart meters that can be pay-as-you-go, the use of ICT can reduce operational costs for providers while simultaneously enable flexible payment options for the poor. ICT increases the flexibility of existing electric grids and is instrumental to increasing energy efficiency in current and future networks.<sup>32</sup> Deeper market penetration of renewables would be impossible without ICT-enabled real time measurement, control and management.<sup>34</sup>

Digital technology enables the use of mobile payment systems, promotes investment in clean energy technology and infrastructure, and allows the use of data analytics, as well as a combination of demand, supply and shortage management to reduce the costs of assessment, maintenance and operations.<sup>35</sup>

28 <https://www.microsoft.com/empowering-countries/en-us/climate-action/city-of-breda/> and <http://www.waterakkersbreda.nl/Waterakkers>

29 <http://news.itu.int/worldwaterday-how-icts-are-creating-smart-water-and-sanitation-systems/>

30 <http://blogs.worldbank.org/water/5-potential-benefits-integrating-icts-your-water-and-sanitation-projects>

31 <http://news.itu.int/worldwaterday-how-icts-are-creating-smart-water-and-sanitation-systems/>

32 <https://reachwater.org.uk/about-reach/how-we-work/> and <https://www.microsoft.com/en-us/research/blog/securing-safe-water-through-cortana-intelligence/>

33 <https://blogs.microsoft.com/green/2017/05/17/how-microsoft-technology-is-enabling-an-autonomous-grid/>

34 <https://unchronicle.un.org/article/sustainable-development-goal-energy-and-information-and-communications-technologies>

35 2 Ibid.

## SDG 11 SUSTAINABLE CITIES AND COMMUNITIES



Cities are the core of global development, with some 4 billion people—54% of the world's population—living in cities in 2015 (this is projected to increase to about 5 billion people by 2030). ICT can enable the design and management of smarter cities that are more inclusive, safe, resilient, and sustainable; providing increasingly detailed information about the services depended on daily.<sup>36</sup> Technology can capture the vast amounts of data generated in the world around us, whether it is sensors that monitor road traffic, the GPS signals for mobile phones, or the passage of water through pipes. Real-time information on traffic can help to ensure that it flows smoothly, thus mitigating congested roads, fuel wastage and carbon dioxide emissions. E-ticketing and other mobility services such as car sharing supported by mobile applications provide flexibility, cost, and convenience advantages for travellers. Automation-controlled heating, ventilation, lighting, and other intelligent technologies optimize energy efficiency and reduce the operating costs of buildings.<sup>37</sup> Smart electric meters and instruments make power grids more stable, efficient, and ready to integrate renewable energy sources and electric vehicles. ICT can also protect urban infrastructure through security and fire safety systems, monitoring and surveillance, access control, and automation and building controls.<sup>38</sup>

ICT opens channels of communication and connectivity, and provides opportunities for people to learn new skills, exchange ideas, collaborate, and conduct business. E-governance platforms also improve public services.<sup>39</sup> Urban populations can have a direct link of communication to their government and be active in the planning process of their cities. Technology increases transparency and empowers citizens through record-keeping, crowdsourcing, and tracking local demographics and government data.

## SDG 12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Responsible production and consumption and ICT are linked through increased virtualization and dematerialization, as well as innovative ICT applications enabling sustainable consumption and production. Artificial Intelligence offers significant opportunities to increase food production by improving agricultural yield and reducing waste.<sup>40</sup> Smart grids and meters, cloud computing, and reduced energy consumption of ICT has a positive impact on reducing consumption.<sup>41</sup> Key enablers include the dematerialization of certain processes and the collection and processing of data in others; digital music services are an example of this. Cloud services could also dramatically affect resource usage, both in energy and material.<sup>42</sup>

While more people are benefitting from ICT, this has also led to an increase in global e-waste. Limited data and laws on e-waste result in health and environmental risks and missed opportunities (e.g. adequately recycling electronic equipment so that raw materials, such as gold, silver, copper, platinum, etc., are not wasted). Better information and smart planning are needed in order to manage this challenge.<sup>43</sup>

36 <https://sustainabledevelopment.un.org/sdg11>

37 <https://www.opengovasia.com/articles/6844-jtc-cio-is-digitising-building-management-creating-smarter-and-more-sustainable-services>

38 [https://w3.siemens.com/topics/global/en/sustainable-cities/documents/transforming\\_cities\\_en.pdf](https://w3.siemens.com/topics/global/en/sustainable-cities/documents/transforming_cities_en.pdf)

39 <https://www.un.org/sustainabledevelopment/blog/2016/08/sdgs-egovernance/>

40 <https://www.microsoft.com/en-us/research/project/farmbeats-iot-agriculture/>

41 <https://www.itu.int/en/sustainable-world/Pages/goal12.aspx>

42 <https://www.ericsson.com/en/about-us/sustainability-and-corporate-responsibility/sustainable-development-goals/goal-12>

43 <http://news.itu.int/measuring-e-waste-now-urgent-priority/>

## SDG 15 LIFE ON LAND



Through improved monitoring and reporting, ICT can play an integral role in the prevention of biodiversity loss and conservation and sustainable use of terrestrial ecosystems. Local sensors can deliver real-time updates, while satellite-based monitoring provides timely and accurate data on a global basis. Big data can also be used to analyse short- and long-term trends of biodiversity ecosystem evolution, pollution and weather patterns, and to plan migration strategies.<sup>44</sup>

Artificial Intelligence is being used to enable real-time precision conservation and improving land cover mapping to redefine how landscape conservation is approached.<sup>45</sup> Web platforms share authentic environmental information with the public, helping to raise awareness of the value of the environment and the sustainable use of terrestrial ecosystems, as well as allow the public to participate and interact directly by reporting environmental phenomena and problems.<sup>46</sup>

## SDG 17 PARTNERSHIPS FOR THE GOALS



ICT is important for supporting global partnerships as it improves efficiency, enhances coordination and improves the quality of information gathered, shared and analysed. ICT is transforming the relationships between citizens and governments through digitalization of public services and increasing opportunities for public participation in decision-making. For example, big data analytics can help improve governments' and citizens' understanding of society and enable evidence based development planning.<sup>47</sup>

## CONCLUSION

The international community is moving forward in pursuit of the goals outlined in the 2030 development agenda. To successfully leverage ICT for development, policy approaches must reflect and remain consistent with the mutually supporting layers of the ICT ecosystem and engage relevant stakeholders throughout the policy-making process. ICC remains available to work with policymakers as they continue to define practical, optimally effective policies to reap the full benefits of ICT for sustainable economic development.

44 <https://www.itu.int/en/sustainable-world/Pages/goal15.aspx>

45 <https://chesapeakeconservancy.org/conservation-innovation-center/high-resolution-data/land-cover-data-project/>

46 <http://www.itu.int/net4/wsis/stocktaking/projects/Project/Details?projectId=1423128678>

47 [http://www.unglobalpulse.org/sites/default/files/Primer%202013\\_FINAL%20FOR%20PRINT.pdf](http://www.unglobalpulse.org/sites/default/files/Primer%202013_FINAL%20FOR%20PRINT.pdf)



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