Framework for Action on ICT for Development in the Pacific (FAIDP)

Information and communication technology (ICT) for development, governance and sustainable livelihoods

June 2010

EXECUTIVE SUMMARY

The Framework for Action on ICT[1] for Development in the Pacific (FAIDP) outlines a new approach to developing and improving information and communication technology (ICT) services to support development, strengthen governance and improve the livelihoods of communities in the Pacific region. It acknowledges that national ICT policies and plans implemented through integrated and well coordinated approaches provide the principle means for ICT to contribute meaningfully to sustainable development. It promotes a 'whole-of-sector' approach, based on the concept of 'many partners, one team'. This approach recognises that numerous stakeholders contribute to ICT development in the region and accepts them as equal partners.

FAIDP has been formulated in response to the call by Pacific Leaders at the 40th Pacific Islands Forum in Cairns (August 2009) for the Pacific Plan Digital Strategy (PPDS) to be reviewed and updated. This direction reaffirmed the continuing importance of ICT as a tool for development in the region and further supported the ICT Ministers' Wellington Declaration, in which they declared, '*We recognize that information and communication technologies (ICTs), while not an end in themselves, have a key role as a basis for economic development, while also promoting and enhancing social cohesion, cultural enrichment and environmental conservation'*.

The Pacific Islands Forum Secretariat (PIFS) in collaboration with the Secretariat of the Pacific Islands Applied Geoscience Commission (SOPAC) and the Secretariat of the Pacific Community (SPC) commissioned a review of the Digital Strategy early in 2010. This framework resulted from the findings of the review together with inputs received from the Pacific Island countries and territories (PICTs), the outcome of the International Telecommunications Union (ITU) assessment of Pacific national ICT policies, the Council of Regional Organisations in the Pacific (CROP), the Pacific ICT Working Group[2] and development partners.

The framework has 12 guiding principles that provide parameters for the relevance and appropriateness of regional initiatives and the modality of engagement among partners, and between partners and PICTs. These guidelines also include consideration of the region's challenges, appropriate technologies, climate change, gender and cultural issues, and sustainable livelihoods as well as the need for leadership, improved coordination and planning, capacity development, and monitoring and evaluation strategies.

This framework outlines seven themes for action aimed at effectively utilising ICT for sustainable development, governance, and improving the livelihood of Pacific communities. The framework will be supported by an implementation plan for the region based on the 'many partners, one team' approach and with monitoring and evaluation mechanisms. The framework aims to help guide future actions, inform policy direction, enhance funding decisions and support the implementation of national policies and plans.

The themes are:

1. Leadership, governance, coordination and partnerships
2. ICT policy, legislation and regulatory frameworks
3. ICT human capacity building
4. ICT infrastructure and access
5. International connectivity
6. Cyber security and ICT applications
7. Financing, monitoring and evaluation

[1] ICTs are basically information handling tools — a varied set of goods, applications, and services that are used to produce, store, process, distribute and exchange information. They include the 'old' ICTs of radio, television and telephone, and the 'new' ICTs of computers, satellites and wireless technology and the Internet (UNDP 2003).
[2] Members include CROP agencies, the Pacific Islands Chapter of the Internet Society (PICISOC), and the Pacific Islands Telecommunications Association (PITA).

The respective themes are described as follows:

Theme 1 *(Leadership, governance, coordination and partnerships)* recognises that strong leadership and appropriate governance mechanisms are needed to ensure that the benefits of ICT are fully realised and would contribute to the livelihood of Pacific Islanders. Better coordination of ICT interventions is needed to ensure that efforts are not duplicated and that limited resources are better utilized. Pooling of resources and expertise will enhance the 'many partners, one team' approach.

Theme 2 *(ICT policy, legislation and regulatory frameworks)* recognises the importance of having a strong and effective policy and regulatory framework to create an enabling environment that promotes fair competition. Businesses, organisations and users need a high level of assurance that the digital infrastructure and networks are reliable and secure, and that an appropriate legislative framework is in place to address cyber crime and enable businesses to conduct online commerce.

Theme 3 *(ICT human capacity building)* recognises the importance of investing in human resource development in the ICT sector. In addition to increasing the skilled ICT workforce, it is important that efforts are increased to retain skilled Pacific Island professionals and minimise out-migration (brain drain) from PICTs. ICT can also bridge the education divide, particularly in rural and remote areas in the region through enhancement of capacity of education institutions to support teachers, complement libraries and empower students. However these types of benefits can only happen if there is leadership, commitment, resources and planning supported by availability of local / national ICT capacity.

Theme 4 *(ICT infrastructure and access)* recognises that most PICTs have poor infrastructure, including in ICT and energy. ICT needs power to operate and it is crucial to build stronger cooperative mechanisms between the two sectors. Providing accessible and affordable energy in PICTs, particularly in rural and remote areas and islands, is a priority that is highlighted in the Framework for Action on Energy Secure in the Pacific (FAESP). Most PICTs are spread across vast distances, causing major obstacles to domestic connectivity. In addition many PICTs have small populations and lack economies of scale, and consequently have limited capacity to improve their infrastructure. The costs of ICT solutions are still high in many PICTs. In such cases shared solutions, such as telecentres and cybercafés, provide the most viable options.

Theme 5 *(International connectivity)* recognises that the high cost of international capacity continues to be a major issue for PICTs. Most PICTs still rely heavily on satellite connectivity at very high rates. Submarine connectivity is a high priority for many PICTs. The increased interest in submarine cable options is welcomed as is the assessment of other new satellite options including the O3B. PICTs need to start planning on how to minimise the risks associated with the transition to Internet Protocol version 6 (IPv6). PICTs should also plan to maximise opportunities to more effectively and efficiently deliver services using IPv6.#

Theme 6 *(Cyber security and ICT applications)* recognises that cyber security is essential as nations become more dependent on ICT and it grows more pervasive in peoples' daily lives. Businesses, individuals and organisations need to trust digital networks so they can use them with confidence. Users need a high level of assurance that the digital infrastructure and networks are reliable and secure, that private information and sensitive data held online is protected, that their online experience will be safe and secure, and that government law enforcement agencies are well equipped to combat cyber-crime. Furthermore, it recognises that ICT can promote greater transparency and more efficient, effective and accessible services. With the increasing pervasiveness of ICT – and more specifically the Internet – in peoples' daily lives, it is essential that government and private sector services are computerised, secured and where possible accessible through the Internet.

Theme 7 *(Financing, monitoring and evaluation)* recognises the importance of ensuring a coordinated approach to financing the ICT sector and of having a robust monitoring and evaluation framework to measure performance across the whole sector against agreed on milestones at both national and regional levels.

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INTRODUCTION

The 'Framework for Action on ICT for Development in the Pacific' (FAIDP) has been formulated in response to the call from Pacific Leaders at the 40th Pacific Islands Forum in Cairns (August 2009) for the Pacific Plan Digital Strategy (PPDS) to be reviewed and updated. This direction reaffirmed the continuing importance of ICT as a tool for development in the region and further supports the ICT Ministers' Wellington Declaration, where ICT ministers declared, '*We recognize that information and communication technologies (ICTs), while not an end in themselves, have a key role as a basis for economic development, while also promoting and enhancing social cohesion, cultural enrichment and environmental conservation*'.

The Pacific Islands suffer from the tyranny of distance, small scattered populations, small markets, lack of infrastructure and human resources, and high costs of connectivity. The ICT Ministers recognised these challenges and in their 2009 Pacific ICT Ministerial Forum Communiqué called for *'increased coordination amongst all stakeholders in the Pacific at regional, sub-regional and national levels to consolidate efforts to improve connectivity*' and acknowledged '*the need for a strategic approach to the development and use of these technologies that recognises the important role of the private sector and the value of building synergies with developments in other sectors, including health, education and energy*'.

The Pacific Island Forum Secretariat (PIFS) commissioned the review of the Pacific Plan Digital Strategy involving PICTs together with regional and international development partners. This Framework was developed following the review. The process to develop the Framework was coordinated by the Secretariat of the Pacific Community (SPC) in collaboration with the Council of Regional Organisations in the Pacific (CROP) ICT Working Group and development partners. The framework is to provide guidance to PICTs to enhance their national efforts to achieve accessible and affordable access to ICT and, in line with principles of the Pacific Plan, to clarify how regional services can assist countries to develop and implement their national plans.

The Framework will have a mid-term review in the latter part of 2012, to be followed by a ministerial meeting to consider the review outcomes on the implementation of the Framework's strategies.

DOCUMENT PREPARATION

This Framework was the result of extensive technical consultation including at regional meetings. Consultations involved PICT representatives from governments, communication providers, non-state actors and members of the private sector from: American Samoa, Cook Islands, Fiji Islands, Kiribati, the Republic of the Marshall Islands, the Federated States of Micronesia, Nauru, New Caledonia, Niue, the Commonwealth of the Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu. Regional and international partners consulted include the Council of Europe (CoE), Commonwealth Secretariat (ComSec), Pacific Islands Chapter of the Internet Society (PICISOC), PIFS, Pacific Islands Telecommunications Association (PITA), SPC, SOPAC, Secretariat of the Pacific Regional Environment Programme (SPREP), and University of the South Pacific (USP). Multilateral agencies consulted include the International Telecommunication Union (ITU), Asian Development Bank (ADB), European Union (EU), World Bank (WB), United Nations Development Programme (UNDP), United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), United Nation Asian Pacific Centre for ICT for Development (UN-APCICT), and United Nations Educational, Scientific, and Cultural Organization (UNESCO). Member development partners included Australia, France and New Zealand.

The consultative process leading to the development of this framework was supported through funding received from the European Union through the EU ACP ICT Access for the Poor project, SOPAC, SPC, the Asia-Pacific Telecommunity (APT) and ITU.

BACKGROUND

ICT is universally acknowledged as a powerful tool for development. Article 19 of the Universal Declaration on Human Rights recognises that '*Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers*.' As members of the international community of states, this fundamental right has been recognised by all Pacific Island countries.

Information underpins empowerment. Empowerment underpins people-centred sustainable development. ICT provides a platform to achieve the Millennium Development Goals (MDGs) through the implementation of locally appropriate national development strategies. It is essential that the full potential of ICT is harnessed for the benefit of all Pacific people, and in particular the marginalised or disadvantaged groups.

At the national level, almost all PICT constitutions recognise the right to 'freedom of expression' and some also recognise a right to information. These rights are recognised as the cornerstones of a vibrant, people-centred democracy. People need information if they are to be able to effectively engage with their own governments, and they must be able to communicate freely if they are to be able to meaningfully guide their own development destinies.

> ***'Information and communication technologies (ICTs), while not an end in themselves, have a key role as a basis for economic development, while also promoting and enhancing social cohesion, cultural enrichment and environmental conservation'***
>
> *- Wellington Declaration*

In recent years a lot of effort has been directed to promoting the benefits of ICT and how it can address the challenges of PICTs and contribute to development at international, regional, and national levels.

In addition to the outcomes of the 2005 World Summit on the Information Society (WSIS), the roles of ICT in development are further captured in Resolution 64/187 of the UN General Assembly, of 21 December 2009, on information and communication technologies for development. The resolution recognised the importance of partnerships with all relevant stakeholders in enhancing access to ICT and that ICT has the potential to provide new solutions to development challenges, particularly in the context of globalisation, and can foster economic growth, competitiveness, access to information and knowledge, poverty eradication and social inclusion that will help to expedite the integration of all countries, particularly developing countries, into the global economy. The resolution also stresses the important role of governments in the design of public policies and in the provision of public services responsive to national needs and priorities through, *inter alia*, making effective use of ICT, on the basis of a multi-stakeholder approach, to support national development efforts.

At the regional level the Communication Action Plan (CAP, 1999), Pacific Islands ICT Policy and Plan (PIIPP, 2002), and most recently the Pacific Plan Digital Strategy (PPDS, 2005) provided direction for developing ICT in the region. The gaps identifed and the recommendations from the review of the PPDS, findings from the ITU assessment of Pacific national ICT policies as well as inputs from the CROP ICT WG, development partners, and more importantly PICTs contributed significantly to the development of the FAIDP.

CONTEXT OF ICT IN THE PACIFIC ISLANDS

The PICTs are dispersed over an area covering a substantial part of the earth's surface. Populations range from less than one hundred people in Pitcairn Islands to approximately 6.8 million people in Papua New Guinea. Large distances, poor infrastructure and diseconomies of scale are common phenomena in the region.

Access to ICT is a human right in some countries. However it will be a long time before all communities in the Pacific enjoy the benefits of access to ICT and the Internet. People who do have access are faced with slower speeds and much higher costs than in other developing countries, let alone developed countries. Greater efforts need to be made to improve equality in ICT access for women, youth, the disabled and marginalised groups.

The ICT Ministers recognised these obstacles and stated in their Wellington Declaration that *'While the Pacific region faces a number of obstacles to the effective deployment of communications and other infrastructure, we acknowledge that the region also stands to benefit enormously from the effective use of ICTs'.*

The United Nations General Assembly, in its very first session in 1946, recognised that *'Freedom of information is a fundamental human right and ... the touchstone of all the freedoms to which the United Nations is consecrated*'. Recognising the fundamental importance of information to sustainable development and good governance, Initiative 12.3 of the Pacific Plan, which focuses on enhancing governance mechanisms, identified freedom of information as a milestone in support of the plan's good governance pillar.

At present, applications such as e-government, e-commerce, e-health and e-education are either non-existent or in their infancy in most PICTs. Recent information on progress in these areas is difficult to obtain, but the accessibility and cost of ICT still represent significant barriers. In many cases, governments and households with scarce resources still struggle to meet very basic needs, with the result that ICT is not a priority. Further, most government ministries and departments still do not have websites, health centres do not have reliable communication links, and most schools do not have computers let alone Internet access.

In other regions, the media often play a role in filling the information gap between governments and the public. However, in the Pacific, the role of the media in supporting good governance and effective development has been variable. In some countries the media are quite active, but in others they have been more restricted. Capacity within the media can also be a limiting factor.

While not all countries have realised the developmental potential offered by the Internet, the increase in availability and accessibility of mobile networks is providing new social and economic opportunities in some PICTs. The increased liberalisation of the telecommunication sector in a number of PICTs over the last few years has improved the reach, quality, availability and affordability of communication, especially mobile telephony services. Many mobile phone networks in PICTs now have the capacity to leverage developmental progress, for example, providing rural financial services, assisting in disaster relief, fighting corruption and improving health services.

Historically, only around 20 per cent of the population of the Pacific has had access to financial services.[3] Traditional approaches to financial service delivery have been ineffective, due to inefficiencies in transport, communications infrastructure and financial institution service delivery models. Emerging technologies are creating new opportunities, including branchless banking, specialised organisation models and product innovation. Most of these technologies are being provided by private sector mobile phone companies, demonstrating the value of well-managed public-private partnerships.

[3] Source: Pacific Financial Inclusion Programme (PFIP – a joint initiative of the United Nations Capital Development Fund [UNCDF], EU, the Australian Agency for International Development [AusAID] and UNDP)

ICT in the Pacific started with radio broadcasting. Now we have mobile phones, wireless networking, digital television, and the Internet. Nevertheless, due mainly to the relative high cost of the 'new' ICT, radio is still the predominant means of communication in PICTs, though it only provides 'one-way' communication. Availability in many PICTs of basic voice as well as more advanced services, such as broadband Internet access, broadband and mobile telephony are generally poor when compared to developed countries. ICT and Universal Access policies are still under development in many PICTs. These policies should improve coverage, particularly in rural areas and remote communities. In some of the smaller PICTs, telecommunications market structures and services have changed little, and it appears that it is difficult for these governments to develop updated ICT policies and legislation, mainly due to capacity and resource constraints.

Lack of human capacity in the Pacific ICT sector is an acknowledged fact. Most PICTs do not have the technical expertise and capacity to deal with the opportunities and challenges that ICT brings. Some of these issues can be addressed by sharing ideas and experience as well as increased collaboration and cooperation. Education is the key to developing sustainable ICT capacity, but this is hampered by various factors including geographical divide and brain drain. There is a need to include basic ICT training in the curriculum for secondary / high schools or colleges.

Although data on ICT use in the region are not robust and often out of date, the following points provide some indication of the challenges facing the region:

- Most PICTs have less than 10 per cent teledensity,[4] with a far lower percentage for rural areas and remote islands;
- Only 30 per cent of PICTs have national ICT policies even though this has been a priority in the past few years;
- Despite the growing reliance on ICT and the crucial role it plays in our society, only three PICTs have legislation that address to some extent the misuse of ICT for criminal purposes;[5]
- None of the PICTs have legislation to enable electronic commerce;
- Only five countries have e-government plans despite the huge potential benefits of using ICT to deliver government services effectively and efficiently;
- Broadband penetration in most PICTs is only about 1 per cent; and
- Monthly fees for basic broadband (256 kbps) in PICTs range from USD 25 to USD 1000.

[4] Number of telephone subscribers per 100 people

[5] E-Readiness Assessment of Forum island countries (PIFS/SOPAC/SPC/USP)

FRAMEWORK FOR ACTION ON ICT FOR DEVELOPMENT IN THE PACIFIC

VISION

Improved livelihood of Pacific communities through effective utilisation of ICT

GOALS

1. Access to affordable ICT
2. Efficient and effective utilisation of ICT for sustainable development
3. Adoption of ICT as a national priority in PICTs

OUTCOME

Enhanced social and economic sustainable development, good governance and security through better access and use of ICT.

GUIDING PRINCIPLES

1. Leadership, decision-making and governance

Strong and visionary leadership and robust governance are keys for successful ICT initiatives. A strong and senior leader is needed to sponsor national ICT implementation efforts and champions are needed for each important ICT initiative.

2. National-led solutions supported by regional initiatives

To maximise the benefits realised at the national level, regional initiatives should be relevant and meaningful to local contexts and address identified national priorities. National initiatives must be viewed and positioned as national development initiatives and not as government ICT initiatives.

3. Holistic coordinated approach

A disjointed and 'silo' approach wastes resources and often results in failure. To maximise the effectiveness and fully utilise the benefits of ICT, a holistic coordinated approach is needed. Such an approach can result in a more sustainable long-term outcome and minimise risks and disruptions due to the introduction of new technologies or systems.

4. Bridging the digital divide

Affordable and accessible ICT reduces the gaps between the 'haves' and the 'have nots', thereby enhancing economic opportunity for Pacific communities. Access to ICT provides affordable communication, improved access to markets and services, a medium for building stronger social ties, improved access to education and health services, and better access to information and news.

5. Sustainable livelihoods, culture, equity and gender

ICT interventions must address the need to reduce inequities, promote access by youth and the disabled, promote gender sensitivity and culture, improve efforts to reduce poverty across and within countries and territories, and facilitate equitable access to adequate, reliable and affordable ICT and services to improve Pacific communities' livelihoods.

6. Using proven technologies: think big, start small, replicate fast

With the limited available resources, the Pacific needs cost-effective, technically proven and appropriate ICT solutions. It should avoid risky and unproven ICT solutions. There is a need to identify the transformative means that deliver values to PICT communities, including ICT sector reforms, new legislative frameworks to deal with emerging ICT challenges, and new skills requirements. Taking into account the weaknesses, there is a need to pick some test and pilot initiatives – especially those that cut across the key sectors and 'silos' – to gain experience and in-depth insight into what is needed to fully

realise the transformative changes. The small-scale pilot initiatives, if successful, can then be implemented on a larger scale in the country and adopted by other PICTs as well. Proven technologies or solutions can be based on environments that are very different to those in PICTs. Using a 'glocal'[6] approach, these solutions can be localised or customised to suit the specific environment of PICTs.

7. Convergence and multi-stakeholder partnership

Convergence means the interlinking of ICT with all media, broadcasting, text, audio, graphics, animation and video to be delivered on a common platform while also allowing the user to choose any combination of media to interact with. It brings together many disciplines, in particular the engineering sciences and the social and behavioural sciences. Convergence requires a multi-stakeholder partnership where the government can implement enabling policies and regulations, provide funding and build capacity; the private sector can build infrastructure and invest in services; civil society can work with communities; and communities own and drive initiatives. The framework will provide guidance on optimising the opportunities provided by convergence to look for low-cost solutions.

8. E-Environment

Protection of the environment is an important issue for PICTs. To complement the various environmental protection initiatives of other sectors, ICT should also play its part in preserving and safeguarding the environment. Green ICT programmes should be established to ensure energy efficient ICT equipment is used and disposed in an environmentally friendly way. In their 2009 Rarotonga Communiqué on Sustainability, Equity and Accountability, Pacific legislators 'recognised that modern information and communication technologies play a vital role in climate change education and awareness, maintaining communication links in times of disaster and the timely management of disaster response and relief, and contributing to disaster risk reduction through, for example, the development of early warning systems'.

9. Availability of ICT data

Accurate measurement of ICT adoption, use and impact is crucially important if policy-makers are to make well-informed decisions. Appropriate measures need to be in place and mechanisms established to ensure integrity of ICT data collected and that statistics are updated and disseminated.

10. Appropriate investment in human capital

Lack of human capacity is an acknowledged fact in the Pacific. There are a number of capacity building initiatives in the Pacific, but the issue remains. Scarcity of ICT data and inappropriate monitoring and evaluation (M&E) systems make it difficult to identify what works and what does not. M&E should be incorporated into capacity building initiatives, but more importantly these initiatives should be needs-based.

11. Many partners, one team

There are many genuine partners and stakeholders in the ICT sector. All have excellent aims and their respective objectives are primarily aligned to national needs. It is the intention that the 'many partners, one team' approach be a collaborative response to national priority needs and plans to minimise duplication of efforts, exploit synergies and maximise impacts. The 'many partners, one team' approach will be implemented through one implementation plan. That is, all partners will need to work as one team to implement this framework. This regional arrangement does not affect bilateral and national-level arrangements.

12. Financing, monitoring and evaluation

The Paris Declaration, the Accra Agenda for Action (AAA) and the Pacific Aid Effectiveness Principles, which are all aimed at better alignment of development assistance, provide the platform for a possible new approach to financing the regional ICT sector. Further, the UN General Assembly Resolution 64/187 encourages a multi-stakeholder approach to ICT development. The principle of one implementation plan, one financing plan and one M&E framework provides the foundation for the 'many partners, one team' approach. The M&E framework will be closely linked to the implementation plan and the associated financing plan.

[6] Glocal (Global/local) – Think globally and act locally

THEMES

The successful implementation of the Framework is dependent on the support and commitment of PICTs, development partners and other stakeholders. The themes categorise the ICT priority areas and reflect commonalities. The themes have been structured so as to provide a rationale, long-term objectives, key priorities, targets and milestones, policy objectives and regional strategies for 2011–2015.

The sovereignty of PICTs is paramount and a regional framework cannot override national or territorial decisions. This framework will be guided by national policies and implementation plans.

The seven themes are:

1. Leadership, governance, coordination and partnerships
2. ICT policy, legislation and regulatory frameworks
3. ICT human capacity building
4. ICT infrastructure and access
5. International connectivity
6. Cyber security and ICT applications
7. Financing, monitoring and evaluation

Theme 1: Leadership, governance, coordination and partnerships

Expected outcome: Strong leadership, governance, effective multi-sectoral coordination and partnerships to fully utilise ICT as a tool for development in the Pacific

1.1 Rationale

Strong leadership with appropriate governance mechanisms are needed to ensure that the benefits of ICT are fully realised and contribute to the livelihood of the people of the Pacific. Better coordination of ICT interventions is needed to ensure that efforts are not duplicated and that limited resources are wisely utilised. At a regional level, there is opportunity for PICTs to cooperate on and coordinate implementation of policy and regulatory reform by sharing experiences, practices and lessons learnt. To make a real difference, key stakeholders need to come together to pool their resources and expertise to effectively implement the framework using a 'many partners, one team' approach.

1.2 Long-term objectives

A regional implementation plan that is established and implemented in an effective and coordinated manner and involves all key stakeholders in the ICT sector to achieve affordable and accessible ICT.

1.3 Key priorities

(i) Better coordination of regional and national ICT initiatives in the Pacific

(ii) Engagement of development partners and key stakeholders in ICT development, as early as possible

(iii) Establishment of partnerships and strategic engagement between regional and international organisations to reduce duplication of efforts, exploit synergies and utilise complementary activities

1.4 Policy objectives and strategies for 2011–2015

Objective 1.1: Develop a mechanism to coordinate a multi-partnership holistic approach to ICT development that has an appropriate monitoring and evaluation component

STRATEGY 1.1.1: Develop a joint rolling three-year Pacific Regional ICT Strategic Action Plan (PRISAP) with appropriate M&E and a prioritised framework that involves all key stakeholders to effectively implement the Framework for Action on ICT for Development in the Pacific using a 'many partners, one team' approach

STRATEGY 1.1.2: Establish a focal point for development partner interaction and coordinated resource mobilisation and allocation to regional ICT initiatives

STRATEGY 1.1.3: Establish facilitating mechanisms that involve key ICT stakeholders in strategic analysis of emerging challenges and opportunities, as well as the oversight, decision-making and /or management of issues in or affecting the ICT sector

STRATEGY 1.1.4: Establish regional facilitated communities of practice to enhance sharing of knowledge and experience to contribute to improved coordination of ICT initiatives at local, national and regional level

1.5 Targets and milestones

(i) PRISAP is established in 2011

(ii) A multi-stakeholder mechanism is established to assist with the implementation of PRISAP

(iii) A mid-term review of the Framework for Action on ICT for Development of the Pacific is conducted before mid-2003

(iv) An ICT officials and ministers meeting is convened after the mid-term review to consider the findings of the review and the progress of its implementation, with the outcome of this meeting to be tabled for Forum Leaders' consideration

Theme 2: ICT policy, legislation and regulatory frameworks

Expected outcome: Strengthened ICT policy, planning capacity, and legislative and regulatory frameworks for ICT to provide an enabling environment for sustainable development

1.1 Rationale

To harness information for development and ensure ICT is used effectively, it is important to have supportive and enabling policies, laws and regulations in place. Despite the need to have a coordinated approach to ICT for development, only have 30 per cent of PICTs have a national ICT policy in place. Data gaps have been identified as a major challenge in PICTs' efforts to meet the MDGs, and it is no different for the ICT sector. To ensure robust and effective policies and regulations are put in place, there is a need to obtain accurate, up-to-date and timely data and information. Forum ICT Ministers recognised the threat of cyber crime and in their 2009 Pacific ICT Ministerial Forum communiqué '*call on Forum Island Countries to enact relevant legislation that would promote a safe and secure ICT environment*'. Currently only three PICTs have legislation that addresses the misuse of ICT for criminal purposes, and two PICTs have legislation that addresses spam (including unsolicited emails). None of the PICTs have legislation to enable electronic commerce.

2.2 Long-term objectives

Development and implementation of supportive policies and regulatory frameworks that provide a conducive environment for the effective development of the region's ICT sector

2.3 Key priorities

(i) Development and adoption of a national ICT policy by PICTs

(ii) Development and adoption of relevant legislation, regulations and other administrative and legal tools, especially those addressing the use of ICT for criminal purposes and enabling online transactions

3.4 Policy objectives and strategies for 2011–2015

Objective 2.1: ICT policy, legislation and regulatory frameworks that provide a conducive and enabling environment for social and economic sustainable development
STRATEGY 2.1.1: Encourage and support the development and adoption of national ICT policies STRATEGY 2.1.2: Encourage and support the development of ICT policies for priority sectors (e.g. education, health, agriculture, fisheries, tourism) STRATEGY 2.1.3: Promote and support the adoption of legislation that encourages electronic commerce STRATEGY 2.1.4: Encourage development and adoption of intellectual property legislation STRATEGY 2.1.5: Promote and support the adoption of data protection legislation
Objective 2.2: ICT policy, legislation and regulatory frameworks that promote open and non-discriminatory access to ICT
STRATEGY 2.2.1: Encourage and support institutional strengthening of national regulators STRATEGY 2.2.2: Encourage inclusion of Universal Access in appropriate policy and legislation STRATEGY 2.2.3: Review licensing schemes to facilitate full benefits of converged technologies and services STRATEGY 2.2.4: Harmonise the radio frequency bands allocated for broadband ICT applications and services STRATEGY 2.2.5: Promote and encourage access to and use of ICT by disadvantaged groups such as women, the disabled and youth
Objective 2.3 –: ICT policy, legislation and regulatory frameworks to address socially undesirable activities
STRATEGY 2.3.1: Adopt appropriate legislation against the misuse of ICT for criminal purposes STRATEGY 2.3.2: Ensure electronic files are admissible in court STRATEGY 2.3.3: Harmonise PICTs' legal frameworks to combat cyber crime and facilitate international cooperation STRATEGY 2.3.4: Develop appropriate policies and legislation to protect children when they use the Internet
Objective 2.4: ICT policy and regulations that are consistent with international and national laws, regulations, technical standards, and obligations.
STRATEGY 2.4.1: Ensure national technical standards incorporate emerging technologies and comply with international standards STRATEGY 2.4.2: Review and update appropriate communication-related legislation STRATEGY 2.4.3: Ensure PICTs comply with software licensing agreements and encourage the use of Free and Open Source Software (FOSS).

2.5 Targets and milestones

(i) National ICT policies and implementation plans including M&E frameworks are developed and operational in 14 PICTs by 2015

(ii) Cyber crime legislation is adopted in at least 14 PICTs by 2015

(iii) A regional strategy to combat cyber crime is developed by 2011

(iv) E-commerce legislation is adopted in at least 10 PICTs by 2015

(v) Electronic files are admissible in court in all PICTs by 2015

(vi) Data protection legislation is adopted in 5 PICTs

(vii) ICT for education policies including M&E frameworks are adopted in 10 PICTs

(viii) ICT for health policies including M&E frameworks are adopted in 10 PICTs

(ix) All CROP agencies have ICT Policies by 2011

Theme 3: ICT human capacity building

Expected outcome: Sustainable ICT workforce and an ICT literate populace

3.1 Rationale

Developing and retaining skilled users and professional ICT workforce is essential for sustainable social and economic development. It is also important to strengthen the capacity of those in the field who utilise information for development, most notably the media. PICTs need to review and consider retention strategies to address migration of skilled professional and the 'brain drain'. This will take effort, commitment, resources and planning and must be addressed at regional, national, and organisational levels. Education is the key to sustainable local ICT capacity and expertise. Currently there are a number of barriers in the education sector, including lack of schools, limited number of qualified teachers and limited resources. ICT can play a crucial role in addressing these barriers, including provision of online resources, computer-based training, online courses and distance education.

3.2 Long-term objectives

A regional ICT human capacity building programme that is established and implemented in an effective and coordinated manner while involving all key stakeholders in the ICT sector and focusing on endorsed priorities of the region

3.3 Key priorities

(i) Capacity building targeting government, industry users, the media, citizens and users of ICT in important areas such as health, education and agriculture

(ii) Coordinating capacity building initiatives in the region

3.4 Policy objectives and strategies for 2011–2015

Objective 3.1: Raise ICT awareness and improve ICT skills and appreciation of policy- and decision-makers
STRATEGY 3.1.1: Develop regional ICT training for managers and mentoring programmes STRATEGY 3.1.2: Encourage the inclusion of ICT training into management courses and induction programmes STRATEGY 3.1.3: Support the development of Pacific media practitioners through training and education, and by strengthening Pacific media associations
Objective 3.2: Develop a sustainable ICT workforce
STRATEGY 3.2.1: Develop and retain ICT professionals and technical staff STRATEGY 3.2.2: Encourage international certification and develop regional ICT skills standards and certification STRATEGY 3.2.3: Encourage training providers to develop and provide work experience programmes

STRATEGY 3.2.4: Promote and support the use of online learning tools and resources STRATEGY 3.2.5: Encourage and support research in ICT fields and applications in areas identified as priorities for the region with industry and development partners
Objective 3.3: Improve basic ICT skills of citizens
STRATEGY 3.3.1: Support the adoption of ICT literacy programmes in schools STRATEGY 3.3.2: Integrate ICT studies into school curricula STRATEGY 3.3.3: Provide ICT training for teachers STRATEGY 3.3.4: Encourage the development and use of digital libraries and learning resources

3.5 Targets and milestones

(i) A joint regional capacity building programme is established

(ii) All PICT secondary schools have access to computers

(iii) 75 per cent of PICT secondary schools have Internet access

(iv) ICT curriculum is included in all PICT teacher training programmes

(v) At tertiary level the students to computer ratio is no more than 10:1

Theme 4: ICT infrastructure and access

Expected outcome: Improved domestic connectivity and access to ICT

4.1 Rationale

Most PICTs have poor infrastructure, including in the ICT and energy sectors. Power is an essential component for ICT infrastructure to operate. Ensuring accessible and affordable energy in PICTs, particularly in rural areas and remote islands, is a regional priority and is addressed in FAESP. Most PICTs are spread over a wide area and thus the 'tyranny of distance' is a major obstacle in providing domestic connectivity due to the geographical divide and capital costs involved. Furthermore, most PICTs have small populations and low gross domestic products (GDPs) and thus lack economies of scale, leading to limited investment in improving these infrastructures. The cost of ICT is still relatively high and solutions like shared facilities are the most viable. The telecentre is one such solution that has proven useful. It can have multiple functions, including serving as an educational facility and a community space not only for accessing information but also for village conversations, discussions and activities. To further address these challenges, PICTs need to take advantage of the opportunities presented by convergence and regionalism by collaborating on a regional or sub-regional level, sharing good practices, policies, experiences, information and data, and identifying synergies to provide accessible and affordable access to ICT.

4.2 Long-term objective

Reliable, efficient, secure and affordable access to ICT for all PICT communities

4.3 Key priorities

(i) Connecting disadvantaged groups (including women, youth, and the disabled, rural areas and remote islands

(ii) Broadband rollout

(iii) Developing appropriate infrastructure to enable and support effective early warning and disaster management systems

(iv) Developing shared facilities such as telecentres

(v) Establishing cooperative mechanisms with the energy sector

(vi) Regional or sub-regional collaboration

4.4 Policy objectives and strategies for 2011–2015

Objective 4.1: Encourage private sector investment in ICT infrastructure
Strategy 4.1.1: Explore and, if appropriate, establish a regional support centre to facilitate investment in the ICT sector
Strategy 4.1.2: Encourage and support a conducive business environment for the ICT sector
Strategy 4.1.3: Promote fair and competitive ICT markets
Objective 4.2: Establish the appropriate ICT infrastructure and initiatives to support and facilitate national sustainable development
Strategy 4.2.1: Promote and support the provision of accessible and affordable communication to rural areas and remote islands
Strategy 4.2.2: Encourage and promote the rollout and use of broadband
Strategy 4.2.3: Promote the use of shared ICT facilities (such as telecentres, e-centres, and cyber cafés)
Strategy 4.2.4: Establish early warning and disaster management systems
Strategy 4.2.5: Promote and support the establishment of e-waste/green ICT programmes
Strategy 4.2.6: Strengthen public service broadcasting
Objective 4.3: Ensure that ICT networks and support infrastructure are reliable, secure, fast and cost-effective
Strategy 4.3.1: Ensure that operators of national critical information and communication infrastructure have robust and stringent contingency plans
Strategy 4.3.2: Explore the viability of a regional PKI[7] and national PKIs
Strategy 4.3.3: Ensure the efficient and effective management of PICTs' ccTLDs[8]
Strategy 4.3.4: Establish a regional mechanism to coordinate with the energy sector

4.5 Targets and milestones

(i) Broadband rollout plans are adopted in 14 PICTs

(ii) A regional E-environment programme (including e-waste) established

(iii) Communication providers in PICTs have contingency/business continuity plans

(iv) Early warning and disaster management systems established in all PICTs

(v) PKI established in PICTs

(vi) A regional mechanism is established to collaborate with the energy sector

[7] **Public key infrastructure** (**PKI**) is a set of hardware, software, people, policies and procedures needed to create, manage, distribute, use, store and revoke digital certificates.

[8] ccTLD - country code Top Level Domain

Theme 5: International connectivity

Expected outcome: Reliable, higher capacity, and affordable international connectivity

5.1 Rationale

The costs of international connectivity, including Internet charges, are still high relative to the market size of most PICTs. The relatively small population and low GDPs of most PICTs is a major factor. With very sparsely distributed, relatively small, regional populations, PICTs remain heavily reliant on satellite services. In general PICTs find satellite costs high and are seeking ways to reduce these costs. Submarine connectivity is a high priority for many PICTs, but due to the high cost associated with its deployment, international connectivity via submarine cable remains relatively scarce among PICTs. Collaborative regional, or even sub-regional, approaches may overcome this constraint. Due to the phenomenal growth of the Internet, IPv4 address space is running out. To ensure continued international connectivity, PICTs need to start planning to minimise the risks that may arise during the transition to IPv6. PICTs should also plan to maximise opportunities for more effective and efficient service delivery using IPv6.

5.2 Long-term objective

Regional collaborative initiatives to ensure international connectivity, especially for small island developing states (SIDS)

5.3 Key priorities

(i) Increase and improve international connectivity

(ii) Address issues related to the exhaustion of IPv4 address space

(iii) Lower the costs of international connectivity

(iv) Increase regional or sub-regional collaboration

5.4 Policy objectives and strategies for 2011–2015

Objective 5.1: Cost-effective regional strategies for provision of international connectivity

STRATEGY 5.1.1: Examine demand aggregation for satellite capacity, including bulk purchase and/or lease of satellite capacity

STRATEGY 5.1.2: Foster regional cooperation on submarine cabling and other infrastructure arrangements such as maintenance of regional fibre optic networks

STRATEGY 5.1.3: Promote and explore technologies and communications service models designed to ensure reliable service and maximise access and minimise cost for the Pacific

5.5 Targets and milestones

(i) PICTs have IPv6 transition plan by 2012

(ii) Collaborative regional projects implemented

(iii) A mechanism is established to monitor international bandwidth, Internet and phone charges in PICTs

Theme 6: Cyber security and ICT applications

Expected outcomes: 1. A safe and secure ICT environment
2. Improved e-services in priority sectors

6.1 CYBER SECURITY

6.1.1 Rationale

Cyber security is essential as countries become more dependent on ICT and it grows increasingly pervasive in people's daily lives. Businesses, individuals and organisations need to trust digital networks so they can use them with confidence. Users need a high level of assurance that the digital infrastructure and networks are reliable and secure, that private information and sensitive data held online are protected, that their online experience will be safe and secure, and that government law enforcement agencies are well equipped to combat cyber crime.

6.1.2 Long-term objective

Improved understanding of cyber security, and increased capacity of PICTs to respond effectively to cyber security issues

6.1.3 Key priorities

(i) Building regional and national cyber security capacity

(ii) Institutionalising cyber security

(iii) Including cyber security in curricula of PICTs' tertiary institutions and training providers

(iv) Raising awareness on cyber safety, risks and threats

6.1.4 Policy objectives and strategies for 2011–2015

Objective 6.1:- Provide a more secure and safer ICT environment

STRATEGY 6.1.1: Support the Pacific Computer Emergency Response Team (PacCERT) and encourage PICTs to setup national CERTs

STRATEGY 6.1.2: Encourage PICTs to ensure that cyber security is included in the curricula of their tertiary educational institutions and training providers

STRATEGY 6.1.3: Develop and promote ICT and Internet safety awareness programmes

6.1.5 Targets and milestones

(i) Sustainable PacCERT established

(ii) National CERTs established in 7 PICTs

(iii) Increased awareness on cyber safety and security

6.2 ICT APPLICATIONS

6.2.1 Rationale

ICT can promote greater transparency and more efficient, effective and accessible services. With the increasing pervasiveness of ICT – and more specifically the Internet – in our daily lives it is essential that government and private sector services are computerised, secured and where possible made accessible through the Internet and other technologies such as mobile phones. ICT applications can assist the priority sectors such as health, agriculture and education through e-learning for affordable professional

development, tele-health for affordable and accessible health services, e-agriculture for affordable access to markets and information, and better access to financial systems.

6.2.2 Long-term objective

ICT applications that support key national priority areas and address the challenges that PICTs face

6.2.3 Key priorities

(i) National E-government plan

(ii) E-services in sectors including government, agriculture, health, environment and education

(iii) Financial inclusion programmes

(iv) Preserving traditional knowledge, languages, records and cultures with ICT

6.2.4 Policy objectives and strategies for 2011–2015

Objective 6.2: Use ICT to ensure more effective, efficient, secure and transparent government services
STRATEGY 6.2.1: Encourage and support PICT to develop e-government plans that may include a single point of contact for government services and centralisation of ICT resources
STRATEGY 6.2.2: Encourage and support PICT ministries and parliaments to develop interactive websites
STRATEGY 6.2.3: Promote and support e-services in priority sectors including agriculture, health, environment and education and in provision of financial services
STRATEGY 6.2.4: Strengthen government archiving systems
Objective 6.3: Preserve, safeguard and promote the cultures and languages of the Pacific
STRATEGY 6.3.1: Encourage and support research on the social and cultural impact of ICT
STRATEGY 6.3.2: Promote cultures and encourage development of local content and use of local languages
STRATEGY 6.3.3: Preserve traditional knowledge and records
STRATEGY 6.3.4: Build stronger ties between communities of the Pacific

6.2.5 Targets and milestones

(i) All PICTs have an e-government plans by 2015

(ii) All PICTs ministries have interactive websites/portals

(iii) E-services are established in PICTs

(iv) Programmes are established to digitalise historical records

(v) Programmes are established to capture traditional knowledge

Theme 7: Financing, monitoring and evaluation

Expected outcome: A financing plan that captures all funds flowing into the region's ICT sector by funding source and implementation arrangements, supported by a comprehensive monitoring and evaluation framework

7.1 Rationale

PICTs are highly dependent on overseas assistance in the form of grants and low interest loans for their ICT sector investment. Except in the larger PICTs, private investment in ICT services is very limited.

Investments in government-owned communication providers often fail to deliver the expected services sustainably for various reasons, typically related to poor planning, management, operation and maintenance, exacerbated by insufficient operating income from fees and subsidies. The magnitude of cross-subsidies (e.g. from urban to rural areas and remote islands) and other subsidies (e.g. universal access funds) is often unknown and they are often not clearly designed and targeted to achieve specific purposes such as social equity. For individual projects, both urban and rural, routine monitoring and evaluation tend to be absent or inadequate.

At the regional level, ICT advisory services to PICTs from regional agencies are also highly dependent on grant aid from development agencies, with some limited services financed by core funding. Gradual transition to an information society will continue to require external assistance, but there should be increased financial self-sufficiency in the services provided by regional agencies.

7.2 Long-term objective

Establishment of a sustainable financing mechanism for the ICT sector with a comprehensive M&E framework

7.3 Key priorities

(i) Donor coordination
(ii) Support for national implementation plans
(iii) Collection and sharing of ICT data and statistics
(iv) Financial planning (budgetary processes) at regional and national levels
(v) Standardisation and synchronisation of M&E indicators for national and regional plans

7.4 Policy objectives and strategies for 2011–2015

Objective 7.1: ICT financing framework to ensure sustainable ICT development
STRATEGY 7.1.1: Develop a framework of cooperation among all stakeholders involved in the ICT sector (including regional agencies, the private sector, civil society and development partners), to enable them to work collaboratively to achieve benefits at the national level
STRATEGY 7.1.2: Facilitate and assist in securing funding to support the implementation of national ICT policies and plans
Objective 7.2: Quality data and guidelines for better policy and effective monitoring and evaluation
Strategy 7.2.1: Review the current range of national and regional ICT data and publish key ICT indicators
Strategy 7.2.2: Develop cost-effective mechanisms for data collection to support policy and M&E activities
Strategy 7.2.3: Assist PICTs to develop appropriate M&E guidance to ensure ICT initiatives incorporate an M&E framework

7.5 Targets and milestones

(i) A regional coordination/collaborative framework is established in 2011

(ii) Additional regional support is provided to implement national policies and plans

(iii) National (and regional) financial plans are developed to address priorities identifies in national policies and plans (and in this framework)

(iv) Better ICT indicators are developed for PICTs

(v) Minimum performance indicators are developed by 2010

ANNEX 1

NATIONAL AND REGIONAL RESPONSIBILITIES

As far as practical, the framework will distinguish the types of issues that should be addressed primarily at a regional (or multiple country) level, those that are a national responsibility, and those where a combination of national and regional approaches is likely to achieve the best outcome. Because PICTs vary tremendously in size, resources, and capacities, regional approaches need to be flexible as needs and priorities can change over a relatively short span of time.

NATIONAL RESPONSIBILITIES

To have affordable and accessible ICT in the Pacific, progress must be made at the community and national levels. National-level leadership is crucial to achieving results. Regional approaches can only supplement or add value to national-level initiatives. Below are some examples of the types of responsibilities that need to be led at the national level. Note that not all apply to all PICTs and that some PICTs may require regional support from time to time in addressing some areas.

1. ICT policies and implementation plans

PICTs are responsible for ensuring that ICT initiatives support, are consistent with and are mainstreamed into national development plans and the budget process. Regional programmes can support policy and plan development, but inclusion in the national budget process, specific national goals, and endorsement by national authorities are all local responsibilities.

2. Roles and responsibilities of national ICT sector institutions

Relevant institutions include government ministries /departments /offices, communication providers, the regulator, Internet and other service providers, and associations of ICT professionals and users. Adequate staffing levels and conditions for government staff and government-owned communication enterprises, and adequate resourcing of national institutions for ongoing support to ICT sector planning and implementation are core national responsibilities.

3. ICT pricing, subsidies, legislation and regulation

ICT pricing (including licensing and interconnection) is a national responsibility, as is the regulation of ICT services and enacting appropriate legislation. National authorities should ensure that ICT charges cover the true cost of services, whether entirely through charges to the user or through charges plus subsidies. Subsidies (including cross-subsidies) should be transparent and carefully targeted.

4. ICT data and information

Collection of ICT data required for analyses and decisions, and making the data available to analysts (within the constraints imposed by statistical regulations), is a national responsibility. PICTs should make resources available for the routine collection of data, including resourcing institutions adequately to do so. PICTs should also regularly inform the lead coordinating agency (or whichever regional mechanism is established) on the status of national initiatives such as project M&E results, pending legislative or regulatory changes.

5. ICT studies and technical reports

Studies and technical reports prepared through regional assistance require PICT commitment to provide the necessary information on national experiences. PICTs are responsible for implementing M&E mechanisms to generate necessary data and information.

6. Relationships between government and private sector regarding ICT services

The private sector plays a big role in the ICT services sector in PICTs and must be involved in the planning and implementation of ICT solutions in PICTs. Development and enforcement of legal frameworks aimed

at improving ICT service delivery (e.g. e-government, universal access) are national responsibilities.

7. Capacity building and human resource development

Each PICT is responsible for prioritising its human resource needs and for developing and maintaining local capacity in the ICT sector.

8. Priorities for technical assistance

Countries are responsible for clearly prioritising ICT needs and keeping development partners informed of any changes to priorities. PICTs also have a role in coordinating broader assistance (including investment) at the national level. A comprehensive and practical ICT sector policy and plan will assist in prioritisation.

9. Close collaboration with development partners

PICTs are accountable for the proper use of external assistance. It is a national responsibility to ensure that any commitments made by a PICT to development partners (such as sustainable operation and maintenance , effective project M&E, agreed levels of fees for end-users, retention of trained staff for an agreed period of time, adapting appropriate legislation etc.) are carried out to the best of its ability.

REGIONAL RESPONSIBILITIES

Regional initiatives should help PICTs improve economies of scale and share good practices and resources in areas that individual countries and territories cannot effectively address. These areas include market access, information, research, sharing of speciliased expertise, replication of successes, and ensuring an integrated development of the ICT sector that contributes to sustainable development in the Pacific. Regional initiatives/interventions should supplement, enhance and add value to national capacity. Below are some examples of the types of initiatives that could be coordinated at the regional level.

1. Facilitation of sharing of knowledge and experience among PICTs

This area involves enhancing regional communities of practice and networks to facilitate the sharing of knowledge and experience between PICTs and improving their capacity to draw upon international best practices and lessons learnt and to contribute to enhanced development effectiveness.

2. Research on emerging technologies

Research and testing are needed to keep abreast of rapid advances in ICT. CROP agencies and development partners can undertake this role and advise PICTs accordingly.

3. Coordination of resource mobilisation for regional initiatives

Assist in mobilising resources for the region and for individual PICTs to support implementation of regional and national ICT polices and implementation plans. Funding secured through this process would be in keeping with the priorities identified in this Framework and national implementation plans. The funds would be spent within PICTs and managed by them to the extent that this is efficient and practical, with cooperative arrangements to preclude competition between PICTs and regional agencies for the same funding.

4. Development and harmonisation of standards across the region

This area involves ensuring standardisation in key ICT areas and providing advice to PICTs on international standards. Due to lack of capacity in the regulatory area, appropriate capacity building initiatives can have better impact and be less costly if coordinated on a regional level.

5. Capacity building and human resource development

Where it is practical to provide ICT sector training services at a sub-regional or multi-country level, this should be supported regionally and at a standard appropriate for the Pacific. Appropriate ICT

specialisations should also be introduced and certification training should be encouraged.

6. Regular dialogue with each PICT on national issues and priorities and regular progress reporting

The status of requests for assistance is often unclear to individual PICTs, and ICT officials and utility staff often learn of opportunities too late to respond effectively. Regular dialogue (perhaps quarterly) with PICT ICT officials and utilities regarding opportunities, services that can (and cannot) be provided, and the status of assistance requests will be a regional responsibility. Furthermore, a regional ICT helpdesk or mailing list can ensure information is disseminated in a timely manner.

7. Support for applied research and development

Most research on ICT will be carried out outside the region. However, there are opportunities for practical, applied research and development that should be supported regionally. Regional tertiary institutes should collaborate with international partners to research and develop technologies that are relevant, appropriate and practical for the region. Efforts should also be made to research the impact of ICT on the PICTs' varied social norms and cultures.

8. ICT data and information

Regional assistance should be provided in developing suitable mechanisms (regional and national) for ICT sector data and information collection, consolidation, validation and management, as required for effective decision-making. Data on ICT (teledensity, Internet penetration, urban vs. rural connectivity, coverage) should be collected and made available for policy-makers and prospective investors.

9. Assessments, studies and technical reports

Work at the regional level is appropriate to provide practical analytical support to PICTs in a range of technical and policy areas. Examples include analysis and reports in areas such as new technologies; case studies in successful deployment of systems, broadband rollout, and telecentres; cyber crimes and cyber terrorism; and green ICT.