People - ICT - Development

RECOMMENDATIONS
TO THE DUTCH PLATFORM RIO 20+

ICT FOR A GREENER ECONOMY

24 OCTOBER 2011

INTRODUCTION

The United Nations Conference on Sustainable Development (UNCSD) is being organized in pursuance of General Assembly Resolution 64/236. The Conference will take place in Brazil on 4-6 June 2012 to mark the 20th anniversary of the 1992 United Nations Conference on Environment and Development (UNCED), in Rio de Janeiro, and the 10th anniversary of the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg. It is envisaged as a Conference at the highest possible level and will include Heads of State, Government officials and other VIPs. The Conference will result in a focused political document. It will focus on two themes: (a) a green economy in the context of sustainable development and poverty eradication; and (b) the institutional framework for sustainable development.

The Dutch government has launched the Dutch platform Rio+20 in order to involve many actors and views from different stakeholders in preparing recommendations for the UN conference on sustainable development.

Since IICD´s mission and experience has generated a wealth of insights into how to assist developing countries to use ICT as a strategic tool for sustainable development and poverty alleviation, we would like to offer a contribution in the form of key recommendations relating to the role of ICT in achieving greener economies in developing countries.

BACKGROUND

The UNEP defines a Green Economy as 'an economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities'.

IICD believes that Greener Economies are achievable only when they are rooted locally. Based on our experience, a strong connection to place is an essential pre-condition to sustainability. Programmes are only successful if seen as an aggregate of individual communities by meeting the needs of the community's members through the responsible, local production and exchange of goods and services.

In order to effectively address the development challenges that inhibit the realisation of improved human wellbeing and social equity, IICD supports and facilitates innovation and positive change within key social systems; in other words, Social Innovation.

IICD sees *Social Innovation* as "A novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals."[1]

IICD believes that the introduction and use of appropriate ICT solutions can and does contribute to socio-economic development and helps to create opportunities for people to shape their own individual future and that of society around them.   IICD's core competencies are to enable and support social innovation through the practical application of ICT, as well as implementing and supporting interventions to ensure that the use of ICT is embedded in concrete development interventions in priority social sectors, thereby contributing to the Millennium Development Goals.

IICD wishes to show that ICT can significantly contribute to accelerating equitable economic development while at the same time conserving the environment by introducing and enhancing the use of sustainable agricultural practices, enhancing resource efficiency and maintaining biodiversity.

At the same time, IICD recognizes that ICT can introduce additional challenges related to sustainability. Nevertheless, if well-guided and smartly implemented, ICT can also be a core element of the solution.

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[1] Definition of 'Social Innovation', Phills et al, 2008

RECOMMENDATIONS BASED ON IICD EXPERIENCE

What is ICT for development (ICT4D)? When we talk about the use of ICTs for development we are referring to the appropriate and sustainable use of information, communication and supporting technologies, both modern (PC, internet, mobile phones) and traditional (radio, television), to support the development objectives of people and organisations (see also annex 1).

For many years IICD has been working in the field of agricultural livelihoods, education, health, governance and the environment in Africa and Latin America, where it has been using ICTs to enable positive change. Much of this work contributes to the larger Green Economy agenda, for example accelerating economic development while conserving the environment, introducing and enhancing the use of sustainable agricultural practices, supporting resource efficiency and more sustainable food production, and maintaining biodiversity. At the same time our work in the education and health sectors contributes to the creation of an educated and healthy workforce.

Recommendation 1: Use ICT to introduce and enhance the use of sustainable agricultural practices

Effective ICT-based development programmes help realise the above by:
- Making small-scale farmers more productive, innovative and responsive to changing markets and social and environmental conditions, thereby improving their incomes (inclusive development),
- Supporting ecological and organic production by small-scale producers' and traders' organisations, and
- Supporting a better domestic exchange of production and market information (enhancing food security based on local production systems and limiting (international) transport).

Example 1: Agrecol Andes (Bolivia)
ICTs were used to support the exchange of successful experiences related to ecological agriculture and the sustainable use of natural resources among farmer communities. ICTs were used to ease the way for the dissemination of information concerning a wide range of experiences, valuable knowledge and the use of innovative technologies among small-scale farmers. Remote communities of small-scale organic farmers were able to take advantage of this information. It was done through registration of experiences and production and dissemination of training materials based mainly on multimedia presentation tools, combining texts, digital photography, audio, video, printed material and the production of testimonial radio programmes broadcast through rural and community radio stations.

Example 2: Certification (Zambia)
The Integrating ICT for Quality Assurance and Marketing is helping to build an internal control system for the inspectors of the Organic Producers and Processors Association of Zambia (OPPAZ). By using an open source database the inspectors are able to collect the necessary data (plot data, crop type, crop produce) on a handheld computer. OPPAZ is helping around 700 farmers to obtain international certification. The system is being tested at three pilot sites (Chongwe, Mongu and Mpongwe). The data collected will also be published on the internet. Once published, this information can be viewed by international partners who would like to buy the produce from those farmers who are members of OPPAZ. The system therefore has a double function: as an internal control system and as a marketing tool.

Recommendation 2: Use ICT to accelerate economic development while conserving the environment and maintaining biodiversity

ICT can strengthen inclusive economic development by providing opportunities for rural communities to generate enhanced sources of income and create alternative economic options. For example, marketing and advertising of community produce or assets using ICT significantly speeds up related communication and transaction processes, and extends the potential market. At the same time, community actors can use ICT to ensure that their environmental assets are protected and remain a sustainable source of income for the future.

Example 3: C-Condem (Ecuador) Conserving Mangroves with ICTs and Community Production
C-CONDEM promotes community production initiatives in the mangrove ecosystem for increased economic sustainability of the marginalised population of the mangrove swamp, in a setting of competition for scarce resources with commercial shrimp producers. ICT is used by poor fishermen's communities dealing with ecotourism in Muisne and for the repopulation of fish and shellfish in Limones, both in the coastal province of Esmeraldas. In this way, it strengthens the local knowledge and capacities of organisations and local communities and improves their management of production initiatives related to conserving the ecosystem. In this manner, grassroots communities and organisations benefit from ICT in their efforts to recover, conserve, and defend the mangrove ecosystem, which is the natural heritage of the Coast and considered to be among the five most productive ecological units in the world.

Example 4: FEPTCE (Ecuador) Promotion, Dissemination and Marketing of Community Tourism
Income from alternatives to agriculture, such as tourism or handicrafts production, is important to strengthen Ecuadorian communities. Therefore, it is vital to promote and strengthen community tourism initiatives in Ecuador to improve the quality of life of the local population and to guarantee the adequate management of quality and sustainability in community tourism projects by Ecuador's indigenous communities. To foster these complementary economic options, FEPTCE uses a system of connectivity, promotion and marketing to provide a more efficient service through an on-line reservation system.

Recommendation 3: Use ICT to transform the behaviour, attitudes and values of individuals as citizens and consumers, economic and social structures, and governance processes

People rarely change their opinions and behaviour on the basis of information alone. Rather they also depend on conversations with their peers, reflections on the social norms, and examples from others. ICT tools are powerful instruments to support these multifaceted processes. Individuals and organisations working to influence existing structures harness ICT to influence opinions, collaborate with others, and recruit people to their cause.

Example 5: Acción Ecológica (Ecuador) documents and raises awareness on how natural resources are managed, and serves as a watchdog on a variety of environmental issues, from biodiversity and conservation, to the consequences of various extractive technologies and free trade. Acción Ecológica uses ICTs to strengthen the dissemination of information and increase awareness about the importance of the enormous environmental challenges in Ecuador, by creating training courses on how to mobilise and empower small-scale farmers, hosting online discussion forums, and facilitating an e-learning platform. The NGO's portal is popular, with about 45,000 page requests per month. They publish electronic newsletters, maintain six different discussion lists, produce presentations for public events, and publish interactive maps on maize and sugar cane production and agricultural commerce in Ecuador. Acción Ecológica also uses ICTs to develop food security strategies for small and medium-scale farmers to help them decide on the sustainable use of natural resources.

Recommendation 4: Connect smallholder farmers

Smallholder farmers are key actors who will contribute to feeding the planet and managing natural resources because of their authentic connection to the land that they farm. In order to make the transition to a greener economy, smallholder farmers (particularly women and youths) should be given the assistance they need to become more productive, innovative and responsive to changing markets and social and environmental conditions.

Appropriate ICT support should be used to make relevant knowledge available to this thus far underserved group in order to improve their agriculture practices and innovation systems. Specifically, ICT should be used to:
- increase productivity and storage management
- strengthen agricultural marketing (local and regional)
- broaden smallholders' access to financial services
- include smallholders in commercial supply chains
- improve food safety and traceability
- support sustainable local ecological and organic production systems
- increase the capacity of farmers and farmers' organisations
- facilitate agricultural risk management to counter the consequences of climate change

Recommendation 5: Honour local roots by promoting participatory approaches

ICT programmes should be developed and implemented on a demand-driven basis by involving local stakeholders at different stages to ensure maximum local ownership of the tools and services from the start. This has proven to be essential for long term sustainability of changed practices and new organisational forms.

- Participatory multi-stakeholder dialogue to generate annotated ideas for prototypes of ICT applications relevant to local needs;
- Capacity building, co-creation and implementation of ICT-based solutions including user feedback and iterative improvement;
- Integration and embedding of the ICT-based solutions at organizational and sector level.

Recommendation 6: Link action and experience to policy

In order to facilitate the transition from non-sustainable practices and policies to government policies that enable the transition to a green economy, local ICT-for Greener Economy initiatives should be brought together in national networks to share experiences, build on each others knowledge, stimulate local research and influence related policies. These networks raise awareness about the potential and the benefits that sustainable practices can bring and are essential to influence policy and development processes. ICT-supported networks have an even broader outreach in terms of participants, information, and knowledge exchange potential and influence.

To ensure that ICTs are really part of the solution it is essential that recommendations 1 to 6 are implemented concomitantly with the following recommendations:

Recommendation 7: Secure optimal technical usage

We recommend that ICT solutions are chosen in type and quantity to secure optimal technical usage during their technical life-time, and to fit the requirements of a particular application or programme. We recommend that technological solutions are tailored to support particular uses, where and when required, rather than making technology available en masse.

Combining different ICTs can provide solutions for reaching out to wider networks of poor users. Information from computer-based databases can be more widely diffused by using other ICTs such as mobile phones or community radio. Technology combinations illustrate that mobile telephony, radio, PCs and the Internet can act as complementary solutions, rather than competing solutions, for the supply of valuable information and communications.

Recommendation 8: Limit energy usage

Another technical dimension of using ICT for Greener Economies is linked to the availability of energy to supply the ICT infrastructure. Preference should be given to energy-efficient technological devices and solutions, and energy-efficient computing should be promoted to avoid further increasing energy demand in countries where energy production is not aligned with demand.

For off-grid areas or areas with erratic power supply, the effective use of ICT is often dependant on a reliable decentralized energy source to ensure energy independence. Such energy solutions required to power ICT use should be based on renewable energy sources, e.g. solar power. R&D investments need to ensure that appropriate solar energy systems become affordable and widely available to fill the production gap, especially in remote areas where centralized energy systems (grids) are not expected to expand in the short term.

Recommendation 9: Improve affordability of ICTs in rural areas

Another major challenge is the affordability of ICTs. We should not underestimate that affordability is key to allowing ICT to be a motor for change. In order for poor people to benefit from greater access to ICT tools and services, these services have to be affordable and in many situations this is not the case. The contribution of ICTs to poverty reduction lies in their power to enable poor men and women to build "livelihood assets" or more secure employment opportunities. The affordability of, for example, cheap mobile phones has improved the uptake dramatically, including in regions where many of the world's poor live and work. This has translated into new micro-enterprises in different sectors, new services and new ways to market produce and other goods. But in many cases the tools and services are still too expensive for the world's poor.

Using ICT can become more affordable for organisations in remote areas by generating workable and sustainable shared connectivity models, for example. This allows for infrastructure investments, internet service costs, and maintenance costs to be shared among multiple actors, thereby significantly reducing the cost per organisation.

Recommendation 10: Tackle e-Waste

Developing countries are expected to triple their e-Waste production over the next 5 years: this calls for a real solution to tackle the growing e-waste problem. Integrated e-Waste management solutions need to be created to enable controlled and appropriate dismantling processes without the toxic impact on health and environment associated with improper handling. The recycling of e-Waste needs to be organized in a manner that is respectful of the role that the informal sector already plays, thereby contributing to income-generating opportunities. However, innovative and appropriate integrated e-Waste management systems need to be supported so that e-Waste can be processed in a more humane and environmentally friendly way.

Dismantling and recycling computers should be promoted and supported in the countries where these devices are used. This creates a win-win situation by developing local businesses and solving the e-Waste problems. E-waste that cannot be treated locally should be exported to specialized plants. Some positive experiences already exist and should be scaled up.

Annex 1: IICD's understanding of ICT for Development (ICT4D)

What is ICT for development (ICT4D)? When we talk about the use of ICTs for development we are referring to the appropriate and sustainable use of information, communication and supporting technologies, both modern (PC, internet, mobile phone) and traditional (radio, television), to support the development objectives of people and organisations.

All three components of the term 'information and communication technology' add value to the development process.

Information
Access to information enables people to make informed decisions which are beneficial for both their private and professional lives. Information that is readily available needs to be based on local needs and should be accessible in ways that people can understand. Where not available, information needs to be developed; preferably by the target group itself. But to change behaviour and develop people needs more than information. Information is not enough.

Communication
Communication enables people to share their views and ideas, enter into discussions, join forces, and co-create solutions, thereby enabling them to address their own individual problems. New forms of communication (such as multi-media, internet and mobile telephony) build on, rather than replace, traditional means of communication (such as meetings, newspapers, radio, television and fixed telephony). Communication allows people to form their own opinion, take informed decisions and change their lives for the better.

Technology
Technology helps us to gather, access and disseminate information more quickly. It also enables people to communicate faster, more efficiently and involve more people in the process. Technologies that support information gathering, storage, dissemination and communication include a wide range of offline and online applications including databases, Web applications and social-networking tools.