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## **Contribution by IAEA**

### **1 Introduction**

It was agreed that HLSOC members would each prepare a two-page issues paper explaining and identifying themes and activities that they consider important to be dealt with or linked to the Summit.

The IAEA's primary interest in reducing the "digital divide" falls under the technology transfer part of its mission statement ("assists its Member States, in the context of social and economic goals, in planning for and using nuclear science and technology for various peaceful purposes, including the generation of electricity, and facilitates the transfer of such technology and knowledge in a sustainable manner to developing Member States"). For the full mission statement, see <http://www.iaea.org/worldatom/About/Profile/mission.html>. Under this mission statement, the Department of Technical Co-operation manages many projects (with the support of technical staff in other departments of the Agency). One particular regional project in Africa is shown here as an example of the use of ICT (in particular e-learning) to support the transfer of technology to developing countries.

### **2 Themes of Interest to the IAEA - E-Learning**

One of the activities of the IAEA, in the area of technology transfer, has become centred on the possibilities of using ICT to support the development of training centres in LDCs (Least Developed Country). E-learning is being used not only to transfer the knowledge about the use of a particular piece of nuclear technology, but is also being used to set up training centres in LDCs, so that the training effort becomes sustainable at the local level (i.e. training the trainers).

At the IAEA, two training packages have been produced in NAFA<sup>1</sup> under Technical Co-operation Project RAF/0/013 "ICT based training to strengthen LDC capacity". These 2 training packages support the Diagnosis of Rinderpest and the Artificial Insemination of Cattle.

#### **2.1 The Diagnosis of Rinderpest and the Preparation for the OIE Pathway**

A CD-ROM has been created which contain training material and background information for the diagnosis of Rinderpest and for the preparation for the OIE pathway. This training package is in support of the Global Rinderpest Eradication Programme (GREP), which is managed by FAO.

The current goal of rinderpest control is to achieve freedom of countries and later of entire world regions from rinderpest with the ultimate aim of achieving global eradication. It is therefore necessary to institute a system for verifying the steps towards these short and long

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<sup>1</sup> NAFA is the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture.

term aims, and to assist countries, which wish to trade in livestock and livestock products, but face difficulties due to the presence or past occurrence of rinderpest. This system, elaborated during the expert consultation held in Paris (August 1989) on Rinderpest Surveillance Systems (described in the document "Recommended Standards for epidemiological surveillance systems for rinderpest"), has since become informally but widely known as the **OIE PATHWAY**. These standards were adopted by the 66th general session of the OIE (Office International des Epizooties) and now form part of the International Animal Health Code, section 4.5.1.1, page 379 (OIE, 1998).

The overall objective of introducing electronic information and communication technology into epidemicsurveillance networks is to maximize the efficiency of such networks for the recognition, diagnosis and reporting of rinderpest and to contribute to the eradication of rinderpest. The specific objective of the training CD-ROM is to provide in tools for training on diagnosis and surveillance of rinderpest of animal health workers and field veterinarians and to assist decision makers with the preparations for the OIE pathway.

## **2.2 Artificial Insemination of Cattle**

Reproduction must be regarded as one of the major limiting factors in animal production, and many of the modern methods for improving reproduction rely heavily on the ability to measure hormone levels in blood and milk. This has produced a worldwide demand for laboratory facilities to carry out hormone assays (radioimmunoassay) and the need for specialist training to allow these assays to be undertaken.

A CD-ROM has been created which contain training material and background information to help artificial insemination (AI) technicians to improve the performance of the AI and to improve the field services provided to farmers. The training package supports the use of RIA (radioimmunoassay) and related techniques to identify ways of improving artificial insemination programmes for cattle reared under tropical and sub-tropical conditions.

The technique of using radio-immunoassay (RIA) was developed for the measurement of progesterone, and, through the production and distribution of an RIA kit and the training on this CD-ROM, technicians in developing countries are able to easily and routinely measure levels of progesterone in cattle. This data is then used to determine reproductive performance. For example, studies conducted under a variety of management regimes and using many different breeds of cattle have repeatedly shown that inadequate nutrition is the major factor constraining reproductive performance and hence productivity.

This CD-ROM and other resources are being used to set up Training Centres (telecentres) in LDCs (e.g. Usa River, Arusha, Tanzania), where local trainers can provide training to the technicians and farmers in the use of RIA techniques.